California

STATEWIDE TRANSIT STRATEGIC PLAN

June Planning Horizons

June 28, 2017 • Caltrans HQ

transitwiki.org

Why Use TransitWiki

A web-based tool that supports goals of the 2012 Statewide Transit Strategic Plan

Goals:

- Facilitate information transfer among California's transit agencies
- Accelerate the identification and implementation of cost-effective strategies to improve transit service
- Bridge the gap between research, reports, and practice for agencies which do not have or have lost in-house librarians or research staff

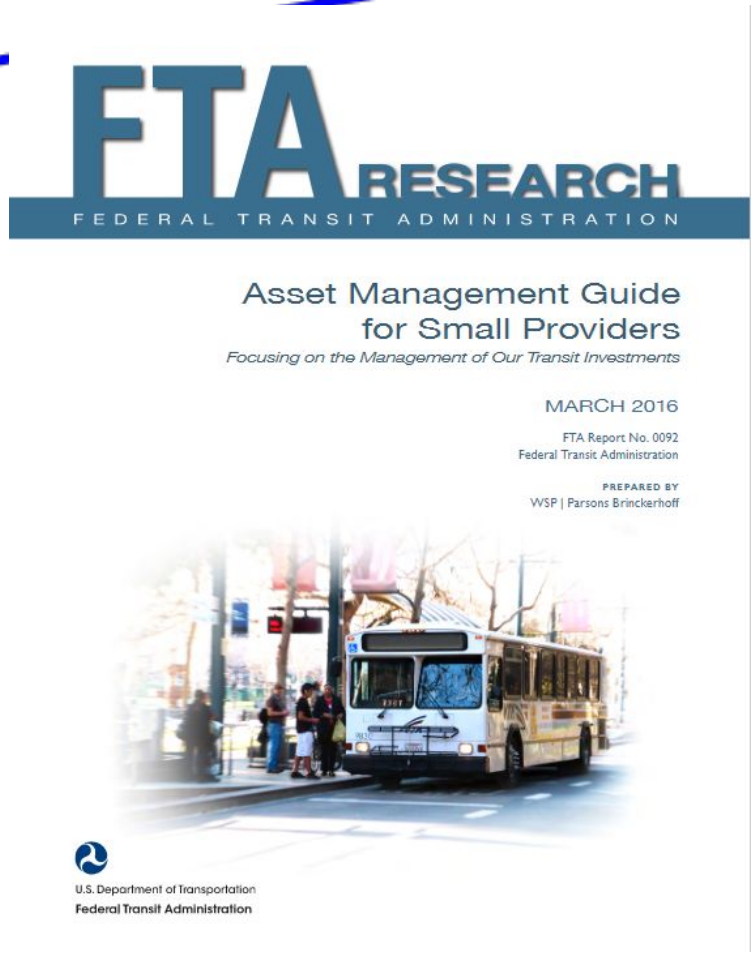
Selected Articles

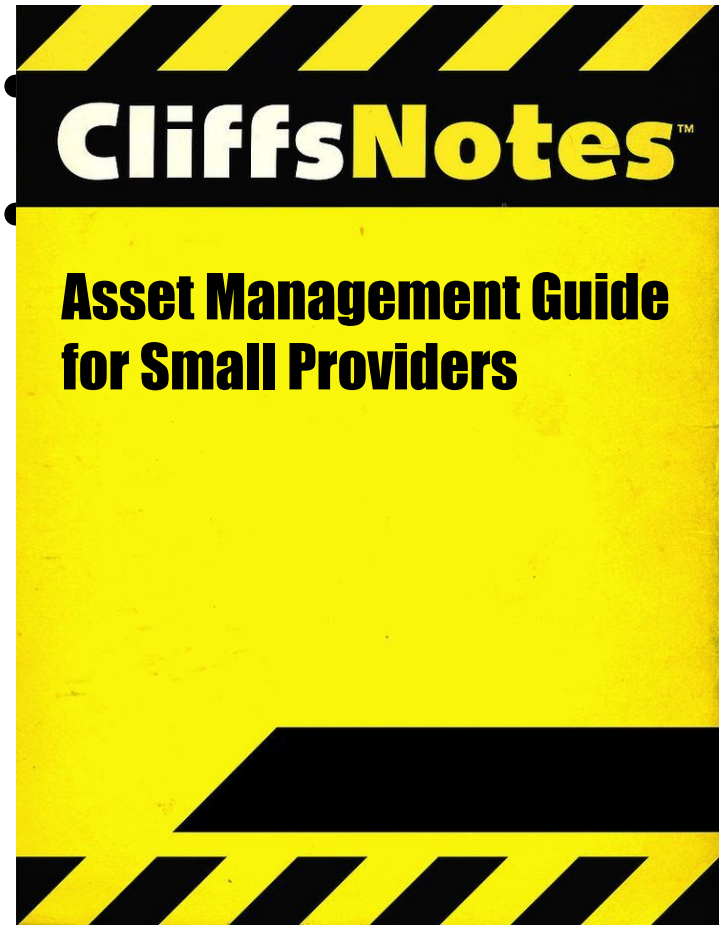
ADA eligibility certification	Paratransit Vehicles
Asset management for small agencies	Park-and-rides
California Vanpool Authority	Programs for seniors
Coordinated Plans	Public health and transit
Cost-effective ADA service	Safe Routes to School
Cybersecurity	Small-scale public-private partnerships
Evaluating bus operator performance	Vanpool and Buspool Services
Labor-management partnerships	Video systems
Paratransit Services	

Plus nearly 200 more

Example Article:

Asset management for Small Agencies





Example Article:

Asset management for Small Agencies

Asset management for small agencies

Contents

While large agencies have extension maintenance budgets, smaller ones have to be more strategic in their asset management. Soure: Alan Weeks, Metro Library and Archive.

Introduction

Transit asset management (TAM) is set of processes and practices managing capital assets in order to provide safe, cost-effective, and reliable service. Capital assets include rolling stock and other equipment, facilities, and infrastructure used in service provision. Establishing a TAM plan allows agencies to strategize on how to maximize the performance of its capital assets over their lifecycles. The 2012 Federal Transit Administration (FTA) Asset Management Guide provides outlines TAM procedures. Smaller agencies, though, deal with fewer assets and fewer resources. This report, Asset Management Guide for Small Providers, is tailored to the needs of agencies with a smaller fleet.

INSTITUTE OF TRANSPORTATION STUDIES

Caltrans

Example Article:

Asset management for Small Agencies

Transit Asset Management Plans

There is no strictly defined structure a TAM plan must take, but this guide recommends a structure based on FTA mandates and best practices across the industry. The structure includes five sections: introduction, asset portfolio, condition assessment, management approach, and work plans and schedules.

Intro

A TAM plan should start with a general introduction to the agency's asset management strategy. This can include an overview of the TAM plan structure, the time horizon of the plan, roles and responsibilities of various members of the agency in carrying out the plan, and references to supplemental documents like vehicle management plans.

Asset Portfolio

Next, the plan should a database of all the assets owned, operated, and/or maintained by the agency. This includes revenue and non-revenue vehicles and facilities, as well ones acquired with or without FTA funds. The portfolio needs to have enough data on the assets to inform future decisions. This includes things like acquisition date, source of funding, use and condition, and projected replacement cost. It's likely that an agency already has a lot of this information cataloged for other reporting programs.

Condition Assessment

After assets have been cataloged, the TAM plan should establish a process of systematically evaluating the conditions of the assets. This helps with predicting failure and identifying safety risks. Like with the asset portfolio, the only requirement of the condition assessment is that it includes enough detail to be useful as a monitoring and planning tool.

Along with a process for condition assessment, an agency should set target conditions for its asset classes. These targets could be age, mileage, or a simple pass/fail rating. More comprehensively defined target conditions are more accurate, but also more burdensome[1]. Setting minimum tolerable conditions helps identify capital needs by establishing exactly when action needs to be taken.

Example Article:

Asset management for Small Agencies

Continual Improvements

The TAM plan is a living document that should be regularly reviewed and updated. This should be done at least every four years. Major changes in assets, capital, or service need to be reflected in the plan. While an agency's first plan might be fairly basic, it should be expanded as the agency becomes for familiar with the TAM process and collects more data.

Conclusion

It is vital that an agency effectively manage its assets in order to provide its customers with the best, most cost-effective service. Creating a transit asset management plan gives an agency a framework in with to maintain these assets. In addition, creation of a TAM plan is mandated by the FTA as a prerequisite for receiving federal grants. By following the steps in this guide, a transit agency can easily create an effective TAM plan.

Asset Management Guide for Small Providers

References

1. ↑ [1.0] [1.1] Federal Transit Administration. "Transit Asset Management MAP-21 Implementation." 2013.

Additional Reading

Rose, D., Isaac, L., Shah, K., & Blake, T. (2012). Asset Management Guide: Focusing on the Management of Our Transit Investments. *Federal Transit Administration.*

The precursor to the Asset Management Guide for Small Providers, this document is aimed at large transit agencies. It gives a much more detailed look to the asset management process.

Spy Pond Partners, LLC, KKO & Associates, LLC, Cohen, H., & Barr, J. (2012). State of Good Repair: Prioritizing the Rehabilitation and Replacement of Existing Capital Assets and Evaluating the Implications for Transit. *Transit Cooperative Review Board.*

State of good repair is closely linked to transit asset management. This report outlines best practices related to maintaining state of good repair and presents four Excel tools that can be used in the process.

William, R., Reeder, V., Lawrence, K., Cohen, H., & O'Neill, K. (2014). Guidance for Developing a Transit Asset Management Plan. *Transit Cooperative Review Board.*

This report, which provides another set of detailed directions for creating a transit asset management plan, also includes an

STSP Update Agenda

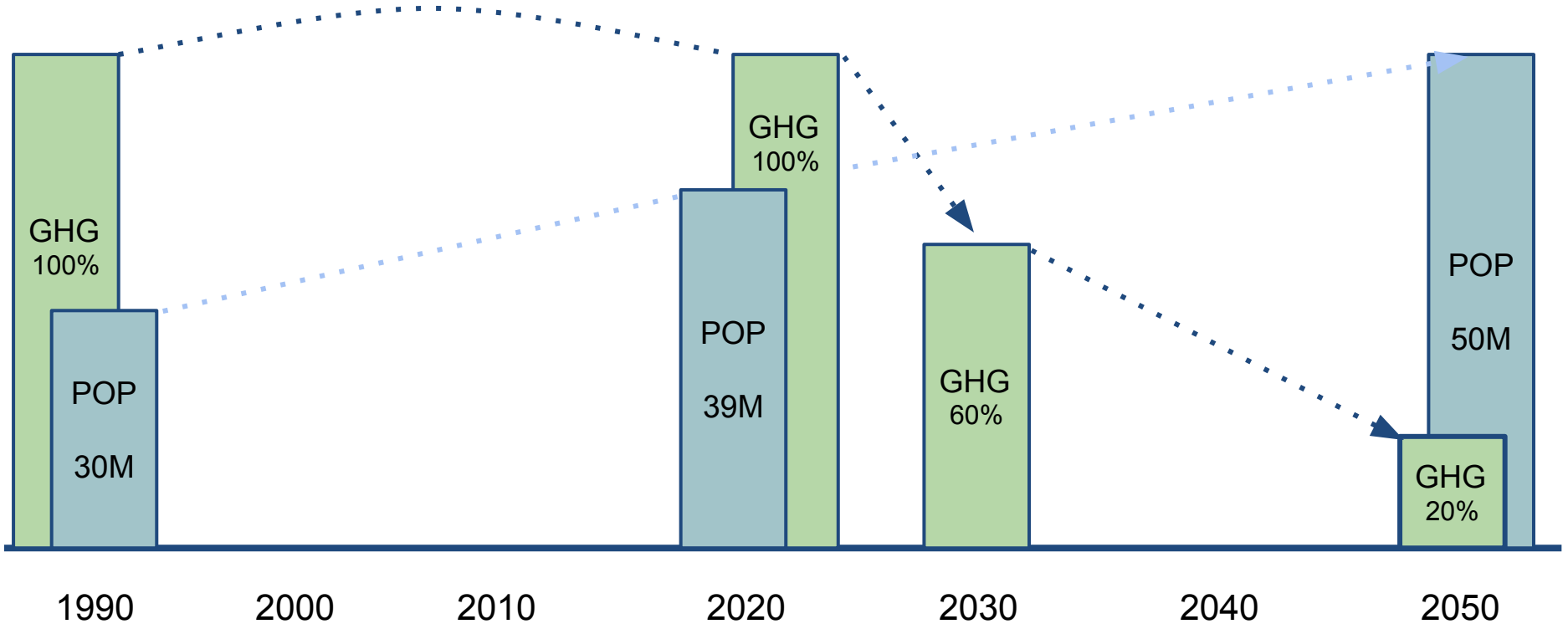
Transit's Role in California

About the Statewide Transit Strategic Plan

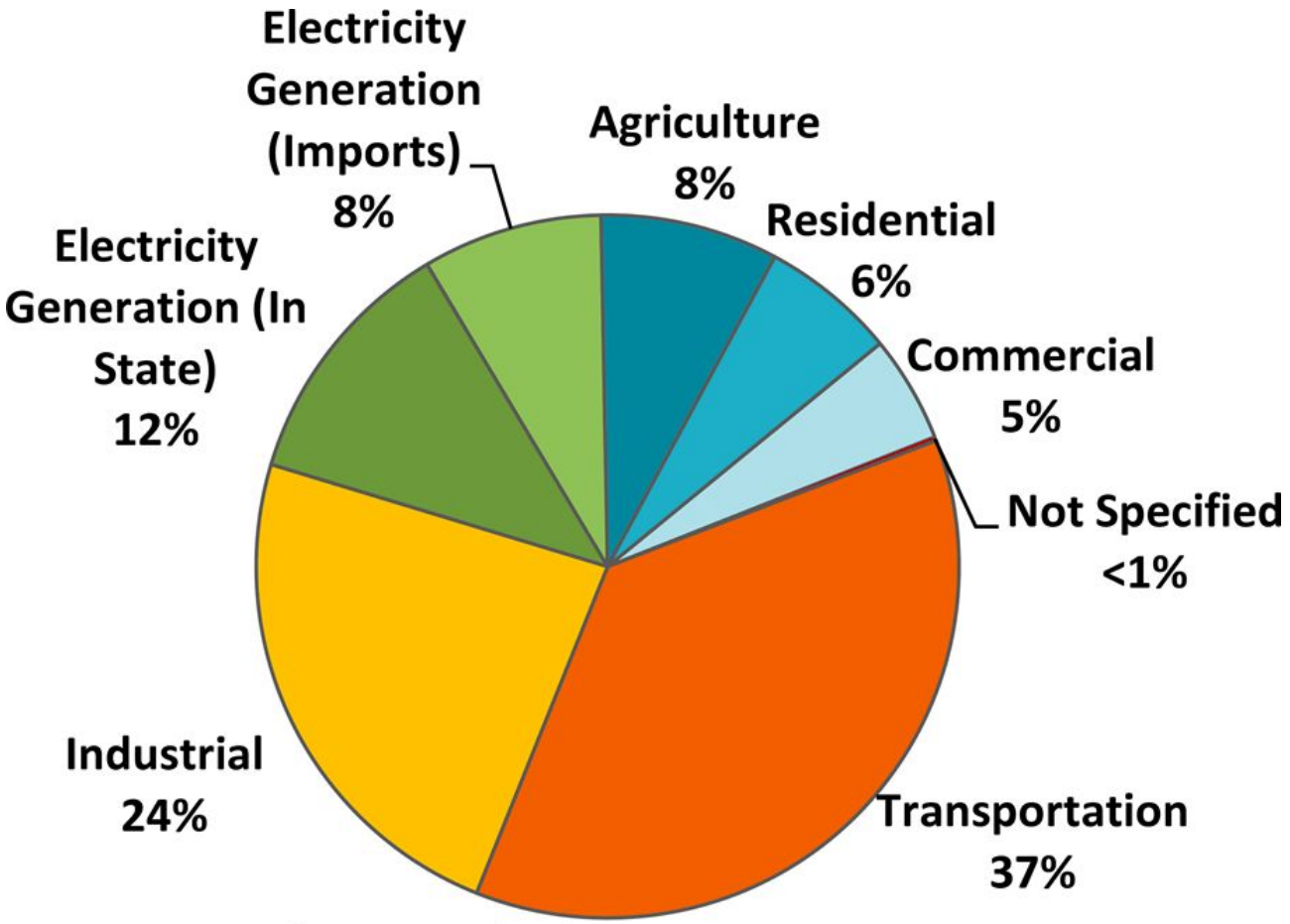
STSP Baselines Report

Open Discussion | Q&A

California GHG Targets and Population



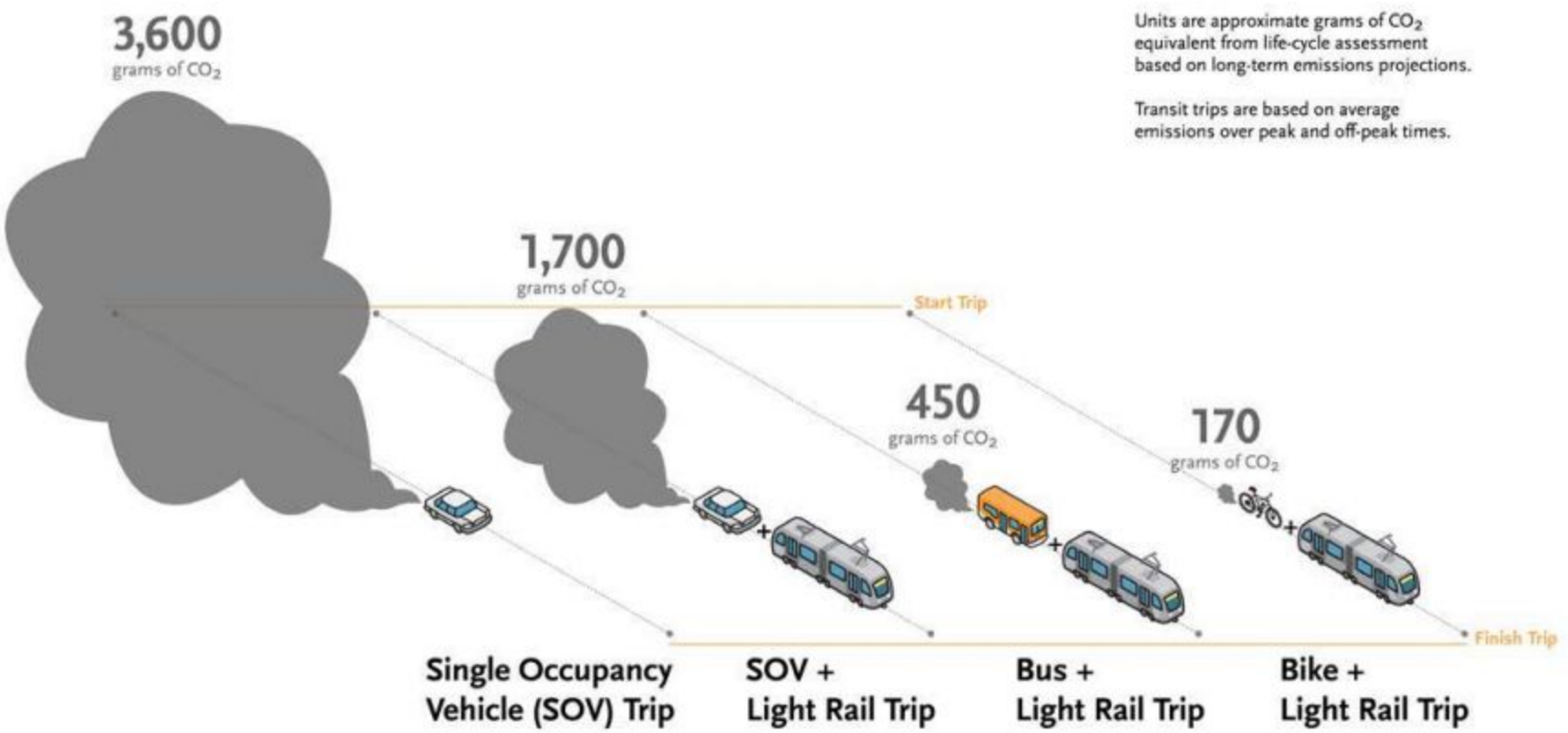
Transportation is the largest contributor to California GHG emissions



2014 Total CA Emissions: 441.5 MMTCO2e

Source: California Air Resources Board

Greenhouse Gas Emissions Per Person Per Trip



Units are approximate grams of CO_2 equivalent from life-cycle assessment based on long-term emissions projections.

Transit trips are based on average emissions over peak and off-peak times.

Metro

Mikhail Chester et al, "Infrastructure and Automobile Shifts: Positioning Transit to Reduce Life-Cycle Environmental Impacts for Urban Sustainability Goals", *Environmental Research Letters* 8, no.1 (2013). doi:10.1088/1748-9326/8/1/015041

Caltrans

UCLA ITS

Transit and Climate Change

- Climate change harms people and the environment
- Automobile use in California contributes to climate change
- Switching to from cars to transit reduces climate change impacts
- Replacing car trips with transit trips in California will save lives and protect the environment
- The CA legislature & governor have mandated action

More Reasons for Transit

Improve air quality

Reduce congestion

Get people to jobs

Create jobs

More Reasons for Transit

Support growing population

Provide mobility for those without

Health: Walking & biking

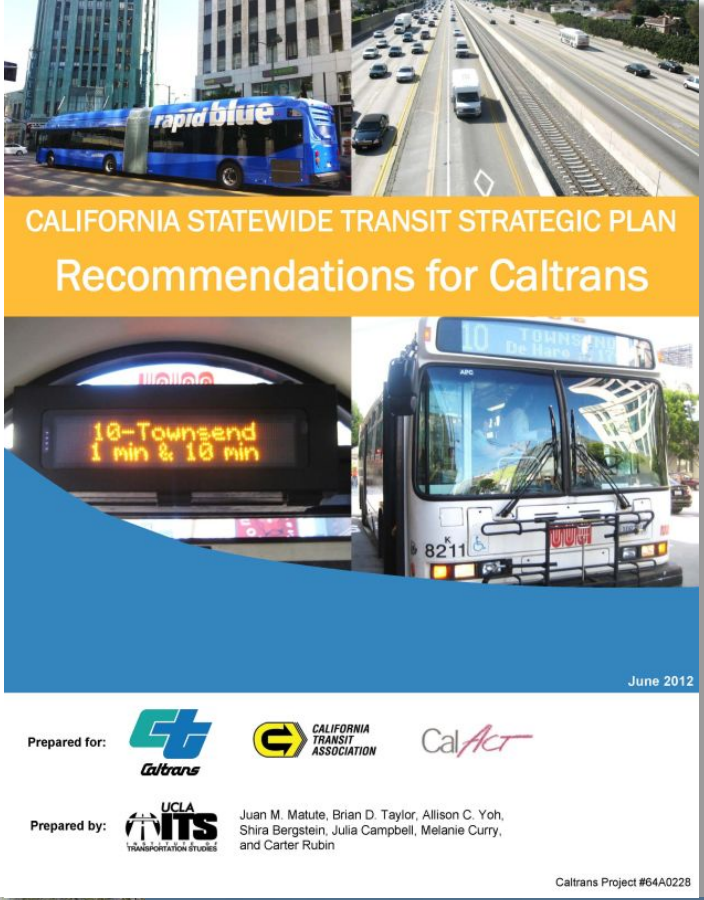
Convert parking to productive use

Project Background

The STSP was last updated in Summer 2012

Need for updates:

- Recent statewide trends of declining transit ridership
- New state transportation goals expressed in legislation and CTP 2040
- Changes to the transportation system, including Transportation Network Companies
- Updates to the California HSR Business Plan



STSP Advisory Committee

- 35 Committee members representing transit agencies and industry associations
- Meetings in October 2016, January & July 2017

Core STSP Project Deliverables

Baselines Report

What's happening with transit in California in 2016?

Stakeholder Report

Insights from interviews and workshops with stakeholders representing transit agencies, MPOs and RTPAs

Interviews and Workshops: *April - June 2017*
Draft to Caltrans: *July 2017*

Strategic Transit Plan

What should the state and agencies do in response?

Baseline Conditions Report

- **Broad-based snapshot** of the current state of public transit in California
- **Descriptive**: establishes a common set of facts and trends
- **Extensive**: 237 pages
  - Today we're presenting **selected, high-level results**

Conclusions and recommendations will come in the third phase of the STSP project

Baseline Conditions: Outline

1. **A Portrait of California Public Transit Agencies**: A basic overview of the entities that provide transit service in California
2. **State and Federal Policies Impacting Strategic Transit Planning:** An introduction to the policies and programs that shape local transit and, collectively, form the basis for a statewide transit strategy
3. **Local Planning for the Future of California Public Transit**: A study of how goals in local plans compare with those in the state's plans

Baseline Conditions: Outline

4. **Use of the California Transit System**: A look at transit use trends statewide, by mode, and by MPO over the 2005-2015 period, with a glance at 2016 trends
5. **Revenues for Transit**: A look at how transit is funded from directly-generated, local, state, and federal sources, and how the mix is changing over time
6. **Cost-Effectiveness of Transit Service**: An overview of trends in the costs of providing transit service in California

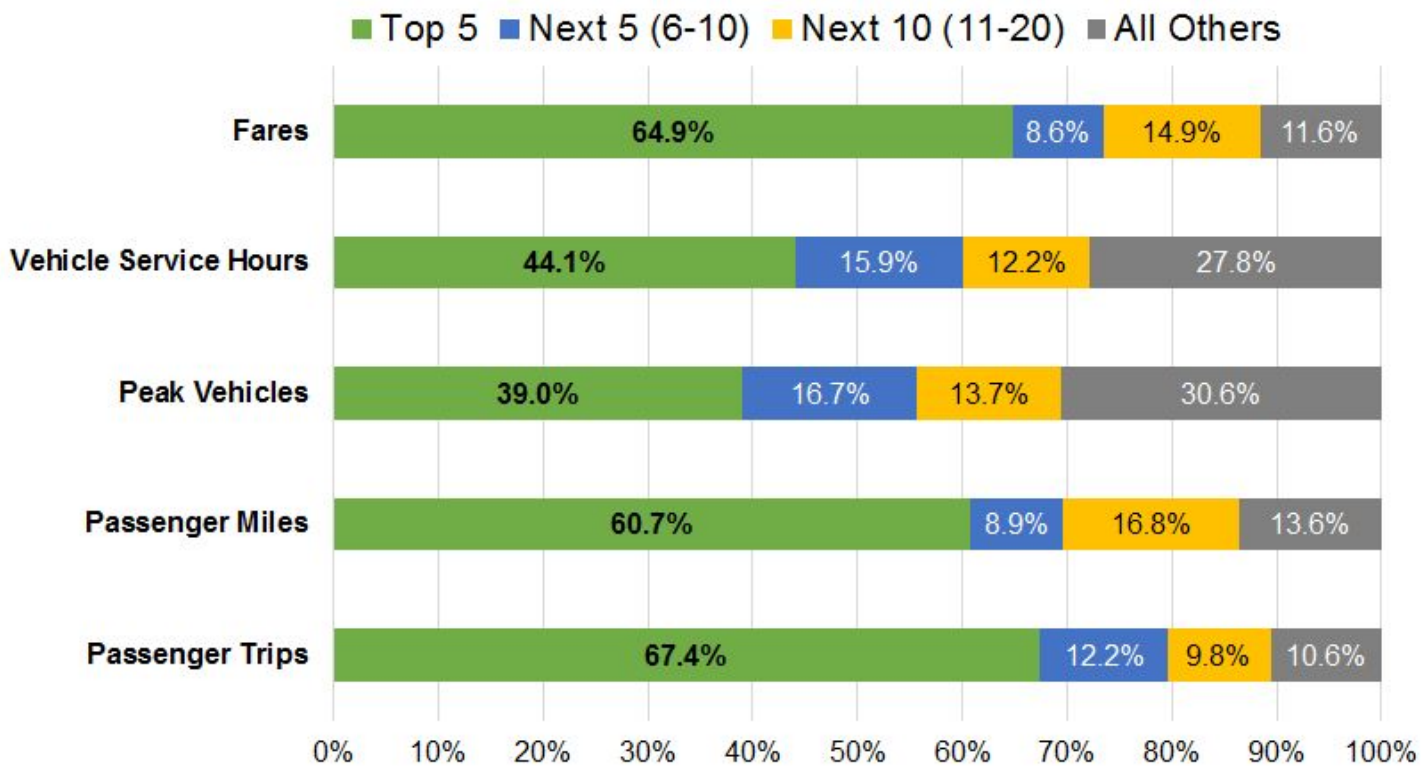
Baseline Conditions - Outline

7. **Private Provision of Shared Transportation Services in California:** An overview of inter-city bus service, Transportation Network Companies, and employer shuttles in 2016.
8. **Standardized Transit Data and Transit Performance Metrics**: We conducted a study of interagency transfer and multi-agency trip volumes to show how new data can enable richer performance metrics.
9. **Conclusions**

Selected Findings

12% of Agencies Carry 89% of Trips

Key California Transit Metrics by Large Agency Grouping



State Transportation Plans

Plan	Implications for Public Transit
California Transportation Plan 2040 (CTP 2040)	Many implications, covered at end of this section
Caltrans Strategic Management Plan 2015-20	Goal to double statewide transit mode share through increases in ridership
California High Speed Rail 2016 Business Plan	Local transit to act as feeder for high speed rail. "Blended approach" means high speed rail will share tracks with commuter and regional rail in Metropolitan LA & SF

State Rail Plan 2018

Note: UCLA has reviewed draft internal materials from the State Rail Plan. The content in these materials may not be incorporated into any public version of the plan.

Future **Amtrak Thruway** service will:

- Allow bus-only ticketing (a ticketed rail segment is currently required)
- Be provided by a combination of private contractors and express services from regional public transit agencies

SRTP Goal Prevalence by Agency Modes of Service

	Bus Only	Bus & Rail	Rail Only	All
Number of agencies	38	5	3	46
Safety	74%	100%	100%	78%
Service effectiveness (ridership, given costs)	71%	60%	100%	72%
Service efficiency (costs)	63%	80%	100%	67%
Increasing transit ridership	45%	100%	100%	54%
Environmental sustainability	45%	100%	67%	52%
State of good repair	39%	100%	100%	50%
Social service for disabled	39%	60%	67%	43%
Interagency coordination	39%	40%	33%	39%
Improving transportation choices	26%	80%	33%	33%
Affordable mobility	29%	40%	0%	28%
Social service for low-income	26%	20%	67%	28%
Congestion reduction	18%	60%	33%	24%
Land use integration	16%	40%	33%	20%
Social equity	13%	0%	67%	15%
Environmental justice	8%	40%	67%	15%

- UCLA ITS studied how goals in California Transportation Plan 2040 compared with those in local and regional plans
- Five most prevalent goals are safety, service effectiveness, service efficiency, increasing transit ridership, and environmental sustainability.
- All agencies operating rail and both bus and rail reference safety in their SRTPs, whereas only 74% of bus-only agencies mentioned a safety related goal.

SRTP Goal Prevalence by Agency Size

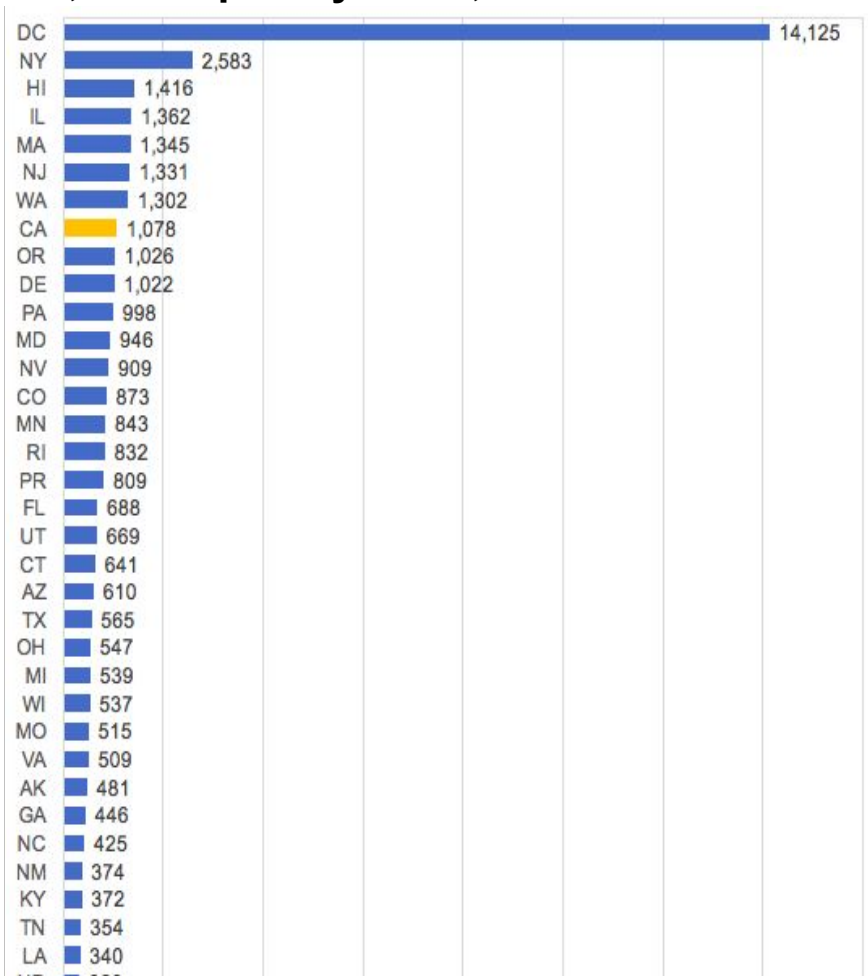
	<100	100-500	500+
Number of Agencies	**18**	**21**	**7**
Safety	50%	95%	100%
Environmental sustainability	44%	43%	100%
Service efficiency (costs)	72%	57%	86%
State of good repair	39%	48%	86%
Service effectiveness (ridership, given costs)	67%	76%	71%
Increasing transit ridership	39%	62%	71%
Social service for disabled	33%	43%	71%
Improving transportation choices	11%	38%	71%
Congestion reduction	17%	19%	57%
Interagency coordination	44%	33%	43%
Social service for low-income	22%	29%	43%
Environmental justice	6%	14%	43%
Affordable mobility	17%	38%	29%
Land use integration	11%	24%	29%
Social equity	0%	29%	14%

Transit Provision & Use in California

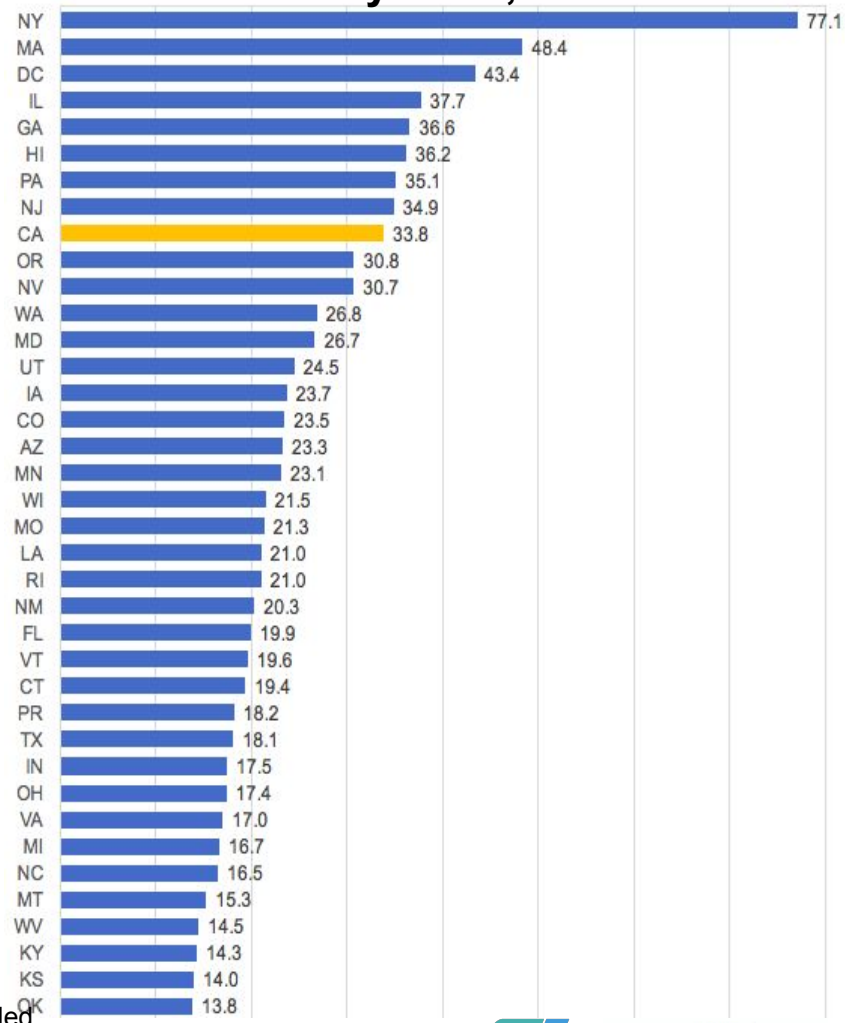
Note: data in the following sections is from the 165 entities in California which report to the National Transit Database

CA is ahead of the pack but not the leader in service provision and productivity

Vehicle Revenue Hours per 1,000 Capita by State, 2015.



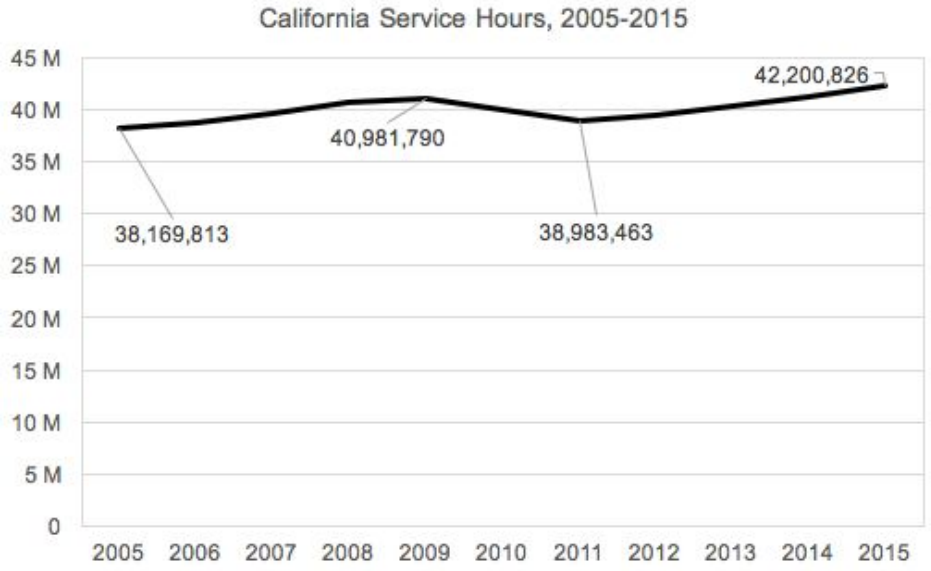
Unlinked Passenger Trips per Vehicle Revenue Hour by State, 2015



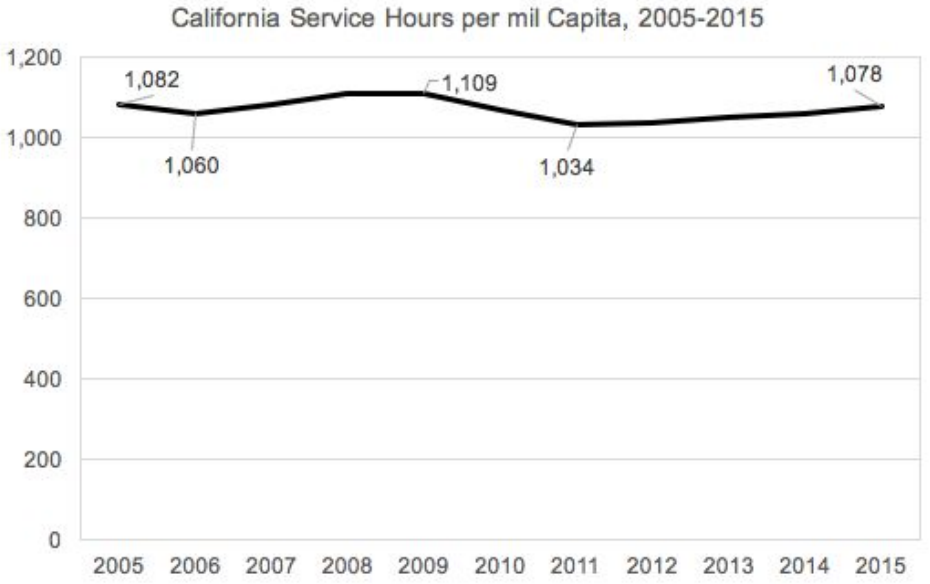
Note: The District of Columbia and Puerto Rico are included.

Statewide Transit Service Hours

Service hours have recovered versus 2010-11...

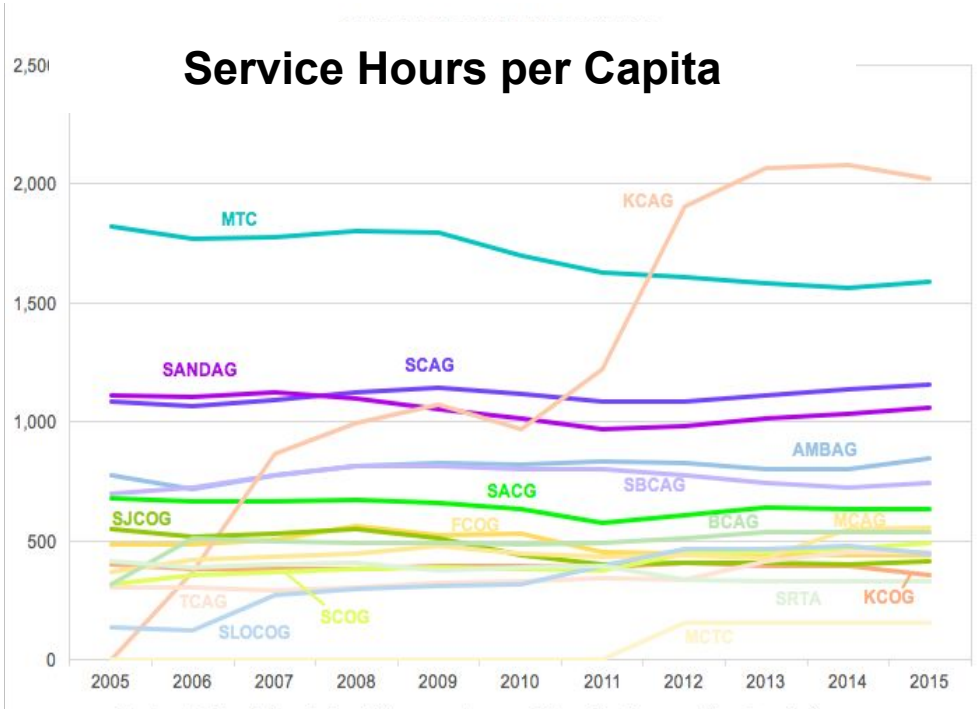


...But still lag population growth versus 2009

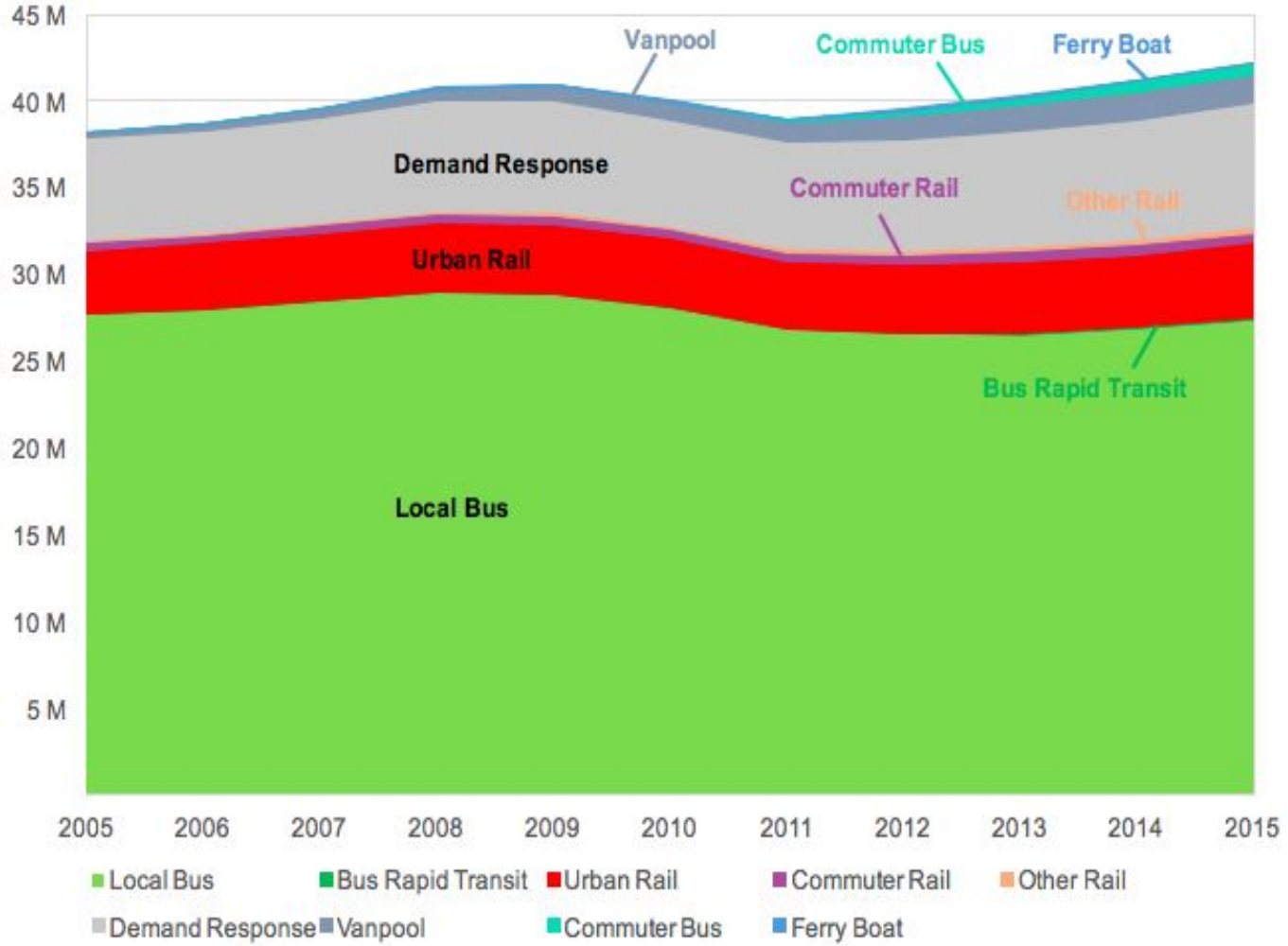


Service Hours by MPO/RTPA

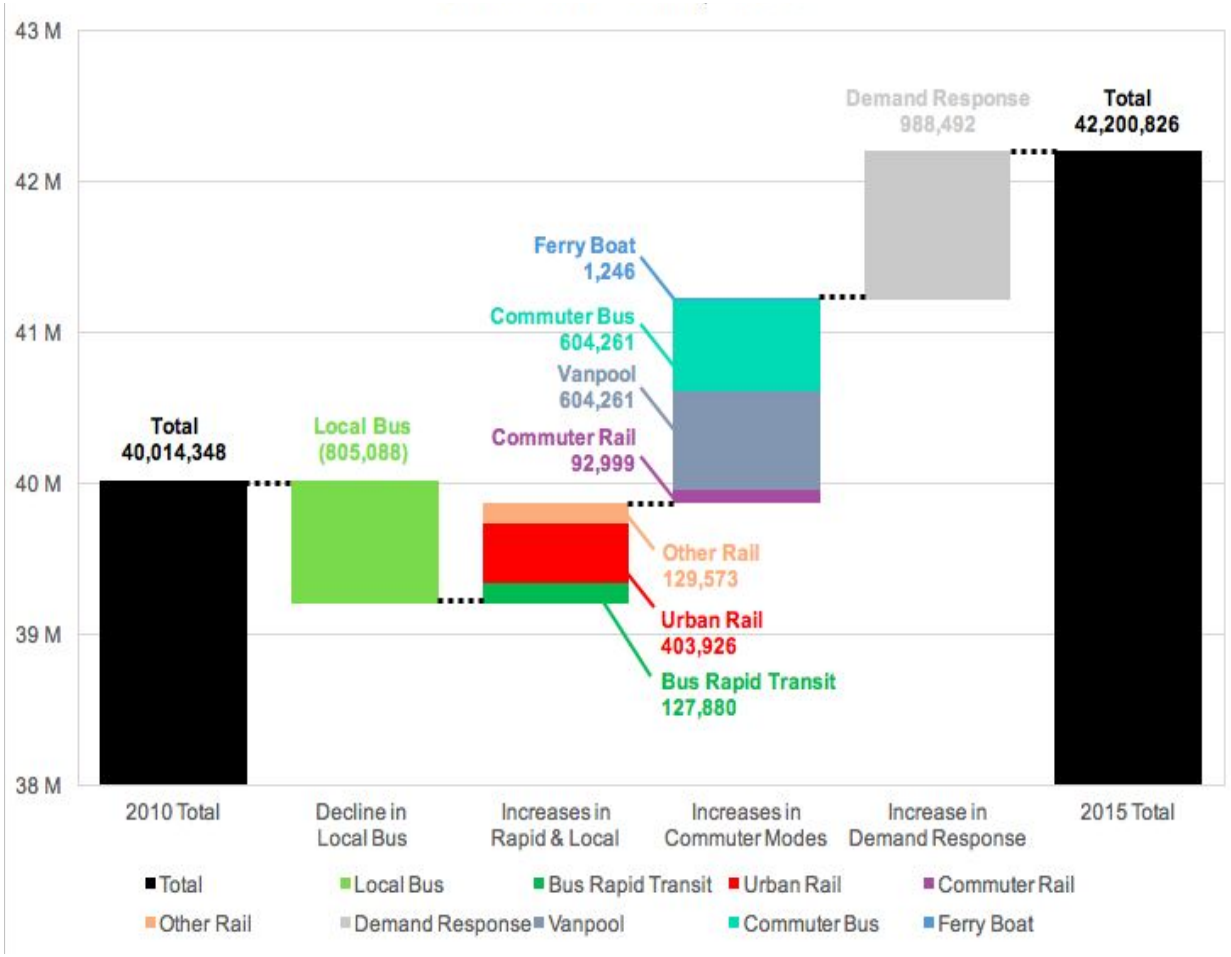
Per-capita declines in MTC, increases in SCAG, SLOCOG



Transit Service Hours by Mode, 2005 to 2015



Change in Transit Service Hours, 2010 to 2015

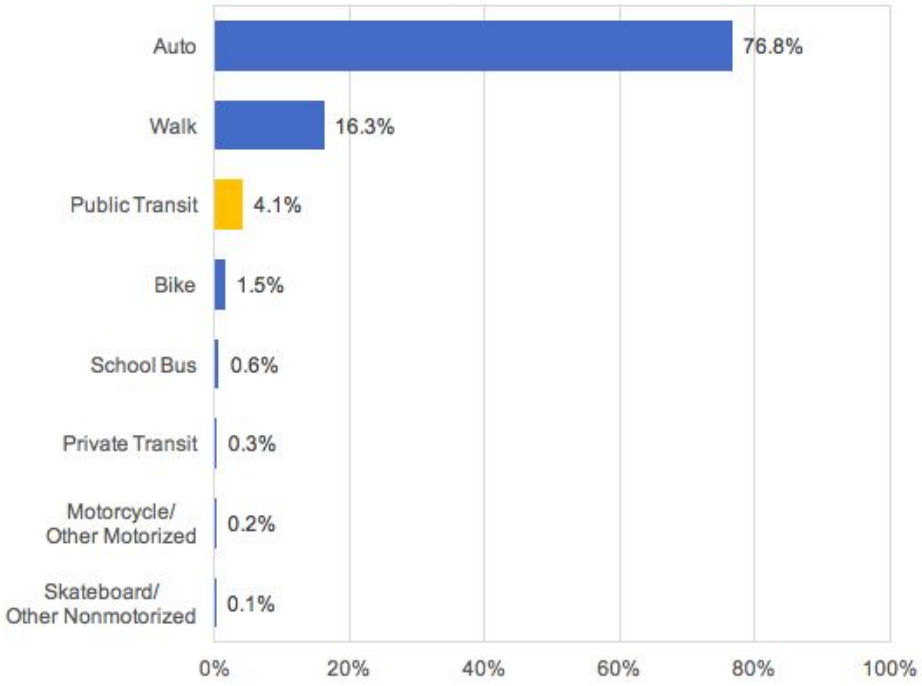


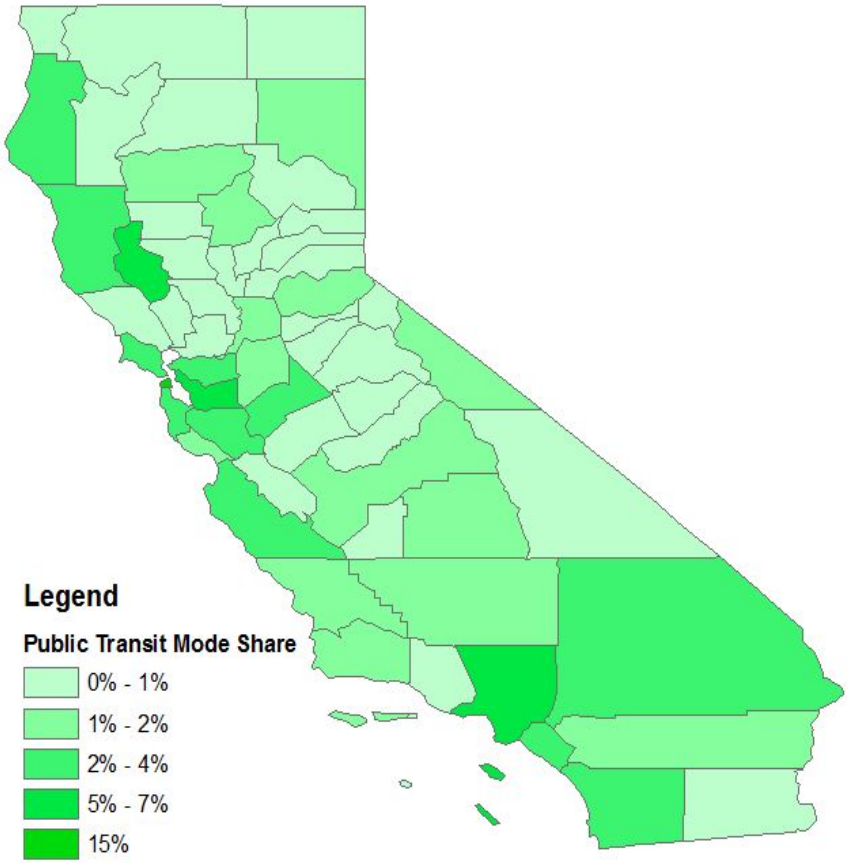
Trends

- Decline in Local Bus
- Not Offset by Increase in other Local/Rapid Modes
- Major Increases in Commuter Modes and Demand Response

NOTE: 2010-2011 reporting change may result in data discrepancies. Possible lesser decline of –614,898 in local bus and lesser increases of +87,345 in bus rapid transit and +454,606 in commuter bus.

California Transit Mode Share





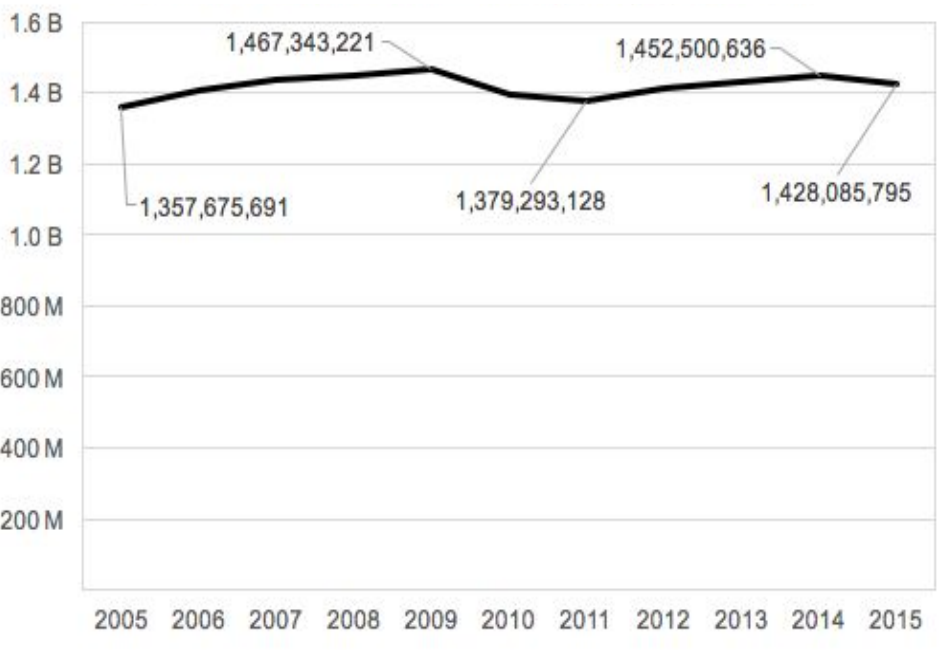
Above: Share of All Trips Taken in California by Mode, 2010-2012.
Right: Public Transit Mode Share by California County, 2010-2012.
Data: CHTS.

Transit Use, 2005 to 2015

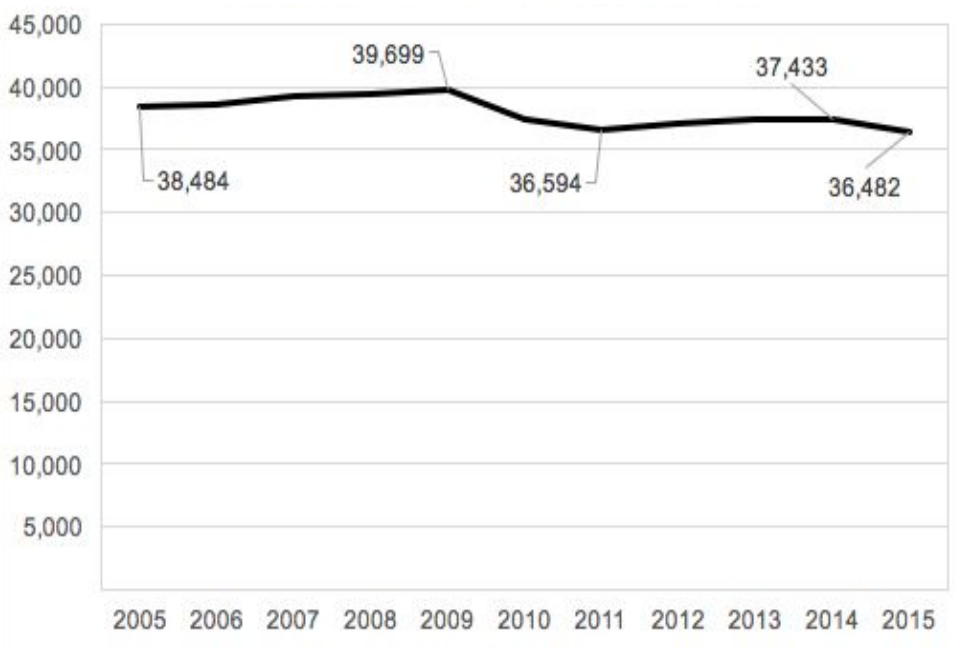
Trips began to rebound from service cuts, but are again trending down

Per capita trip-making is trending down

California Transit Boardings

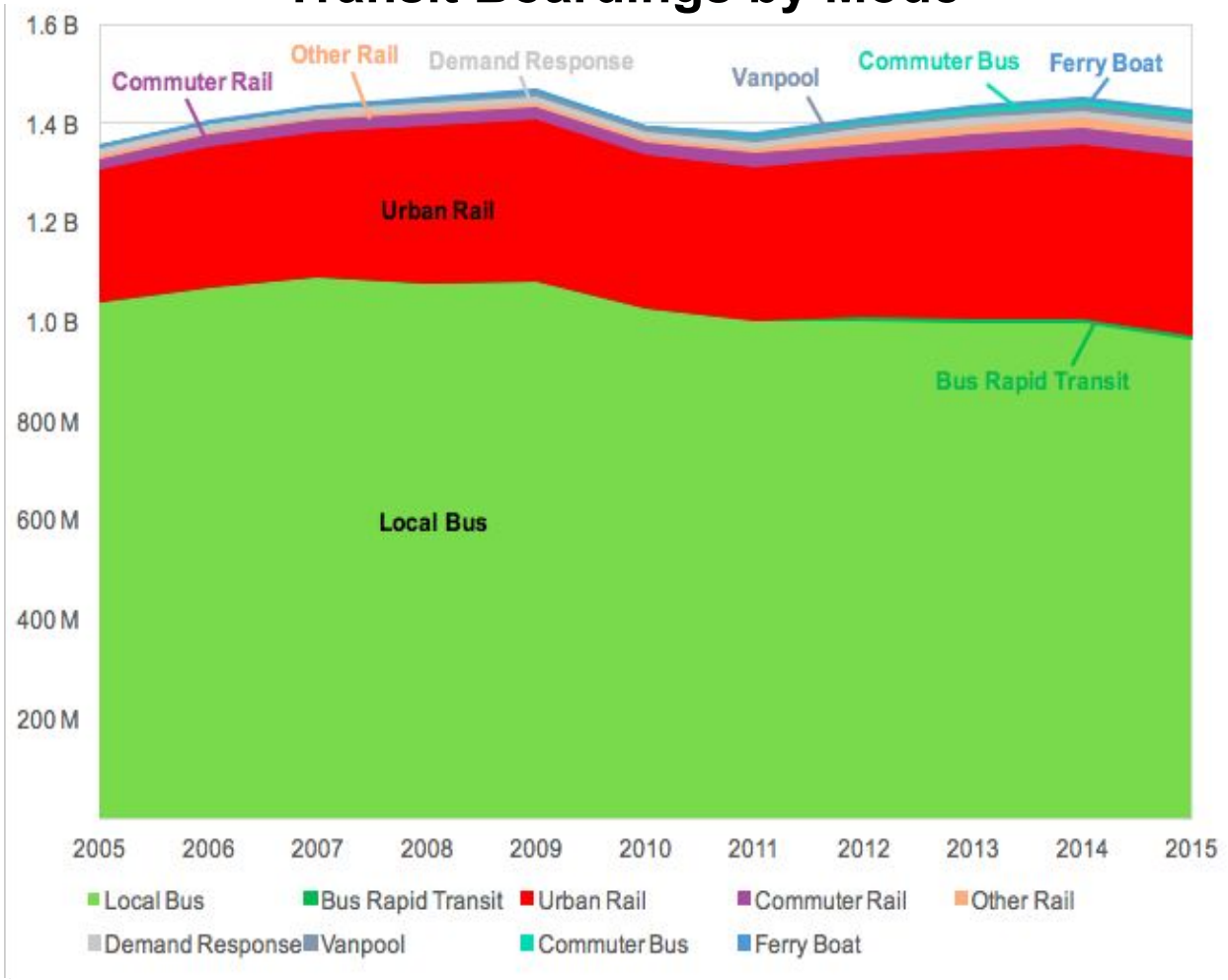


Boardings Per 1,000 Capita



Transit Use, by Mode, 2005 to 2015

Transit Boardings by Mode

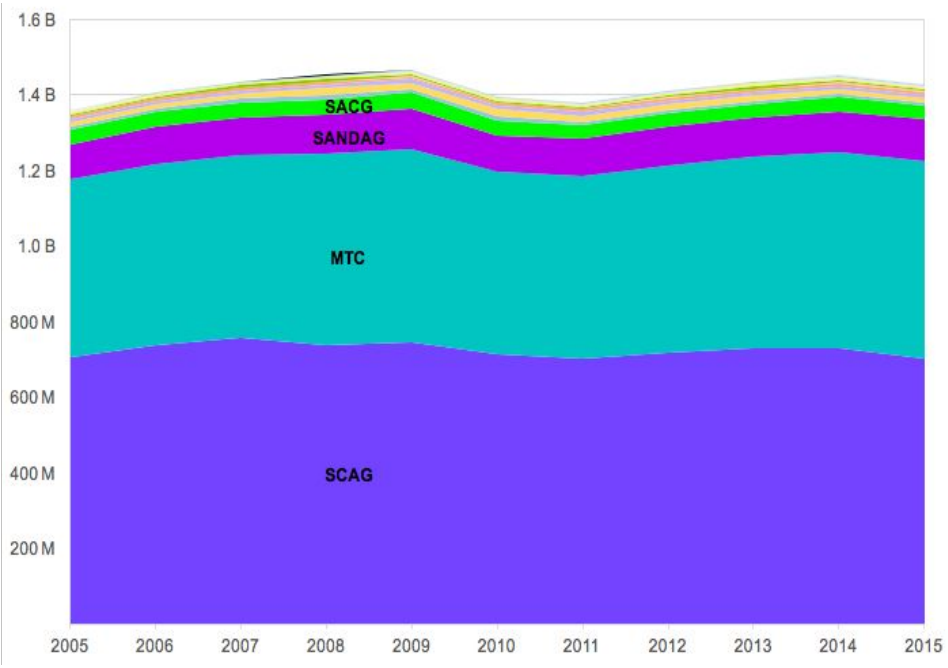


Trends

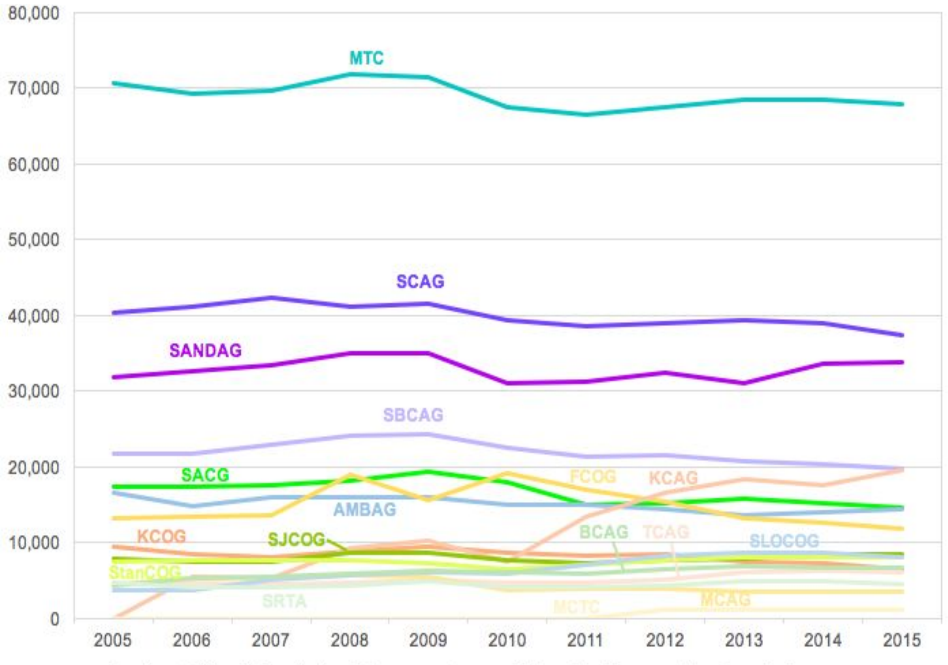
- Gains in Urban Rail
- Losses in Local Bus
- Commuter Rail, Commuter Bus, Vanpool continue to grow

Transit Use, by MPO, 2005 to 2015

Transit Boardings by MPO



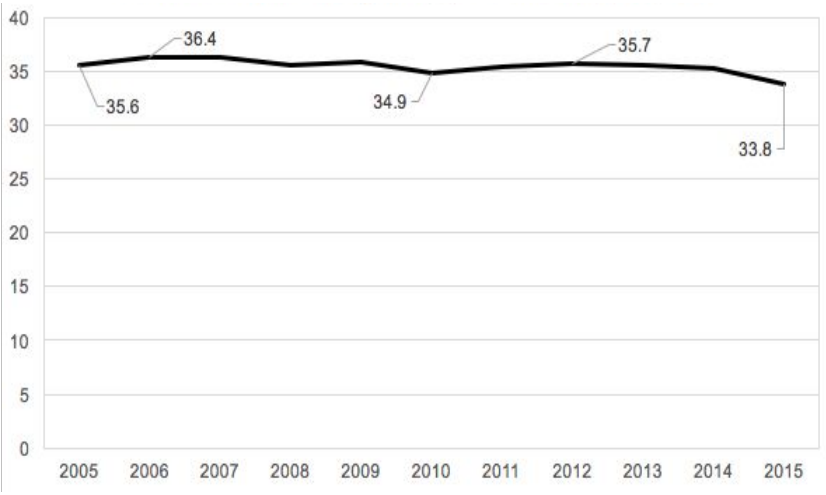
Boardings Per 1,000 Capita by MPO



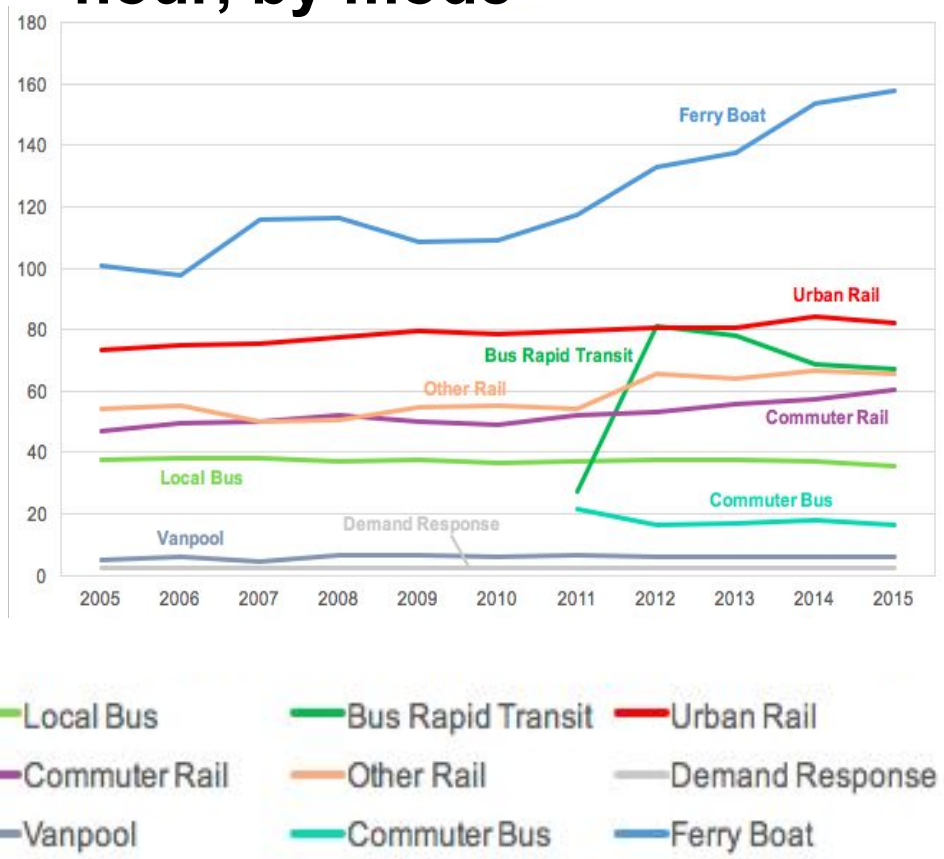
- Southern California Association of Governments
- Metropolitan Transportation Commission
- San Diego Association of Governments
- Sacramento Area Council of Governments
- Association of Monterey Bay Area Governments
- Fresno Council of Governments
- Santa Barbara County Association of Governments
- Kern Council of Governments
- Kings County Association of Governments
- San Joaquin Council of Governments
- Stanislaus Council of Governments
- Tulare County Association of Governments
- Merced County Association of Governments
- San Luis Obispo Council of Governments
- Butte County Association of Governments
- Shasta Regional Transportation Agency
- Madera County Transportation Commission

Declining service productivity, but not across all modes…

Passenger boardings per service hour

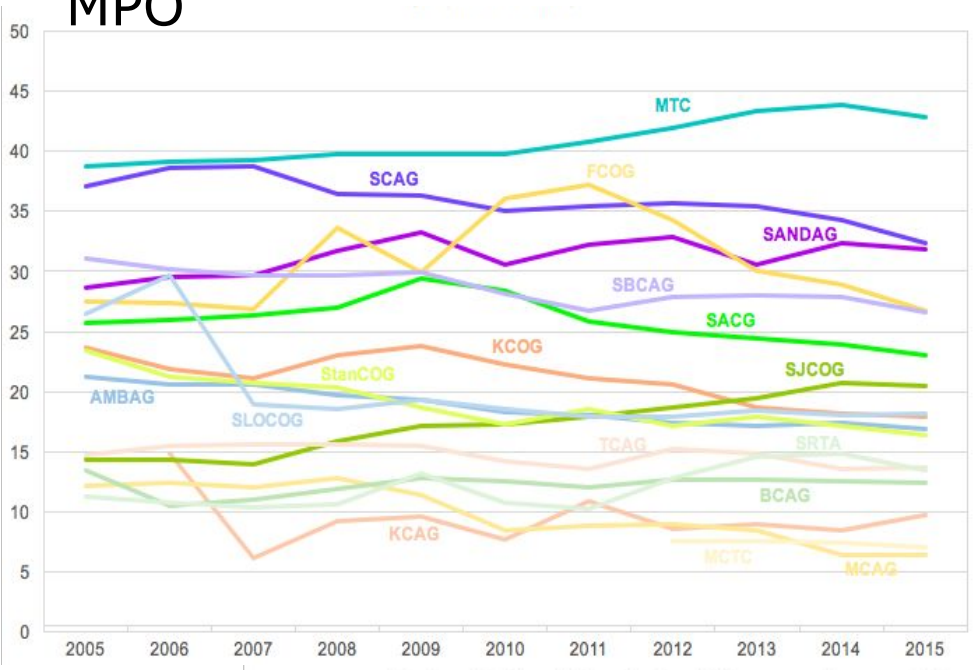


Boardings per service hour, by mode

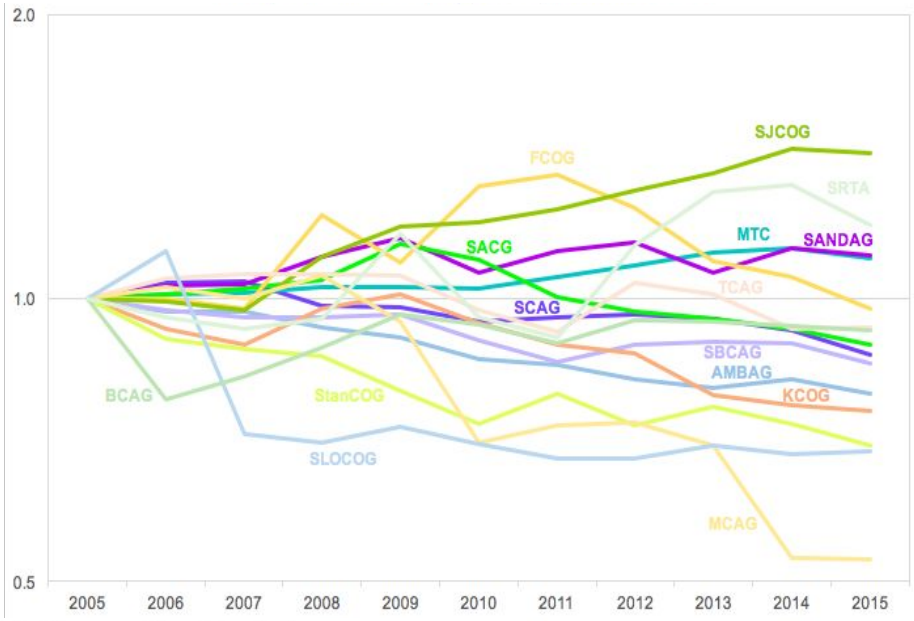


...nor across all MPOs

Boardings per service hour, by MPO



change from 2005 to 2015 (2005 = 1.0)



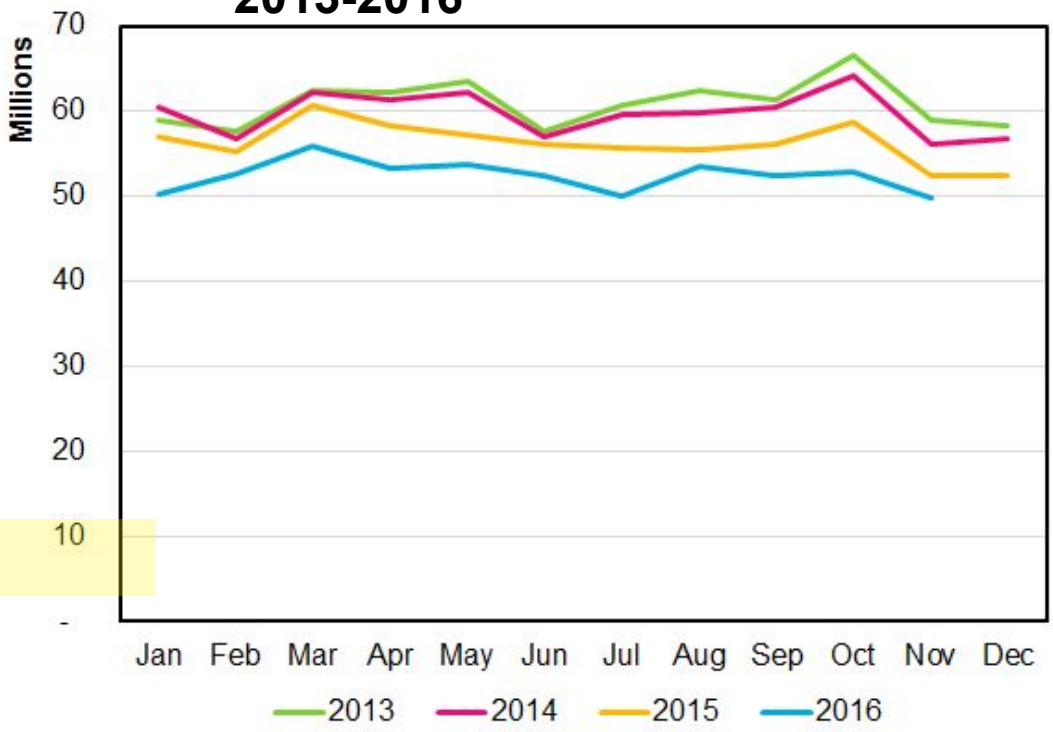
- Southern California Association of Governments
- Metropolitan Transportation Commission
- San Diego Association of Governments
- Sacramento Area Council of Governments
- Association of Monterey Bay Area Governments
- Fresno Council of Governments
- Santa Barbara County Association of Governments
- Kern Council of Governments
- Kings County Association of Governments
- San Joaquin Council of Governments
- Stanislaus Council of Governments
- Tulare County Association of Governments
- Merced County Association of Governments
- San Luis Obispo Council of Governments
- Butte County Association of Governments
- Shasta Regional Transportation Agency
- Madera County Transportation Commission

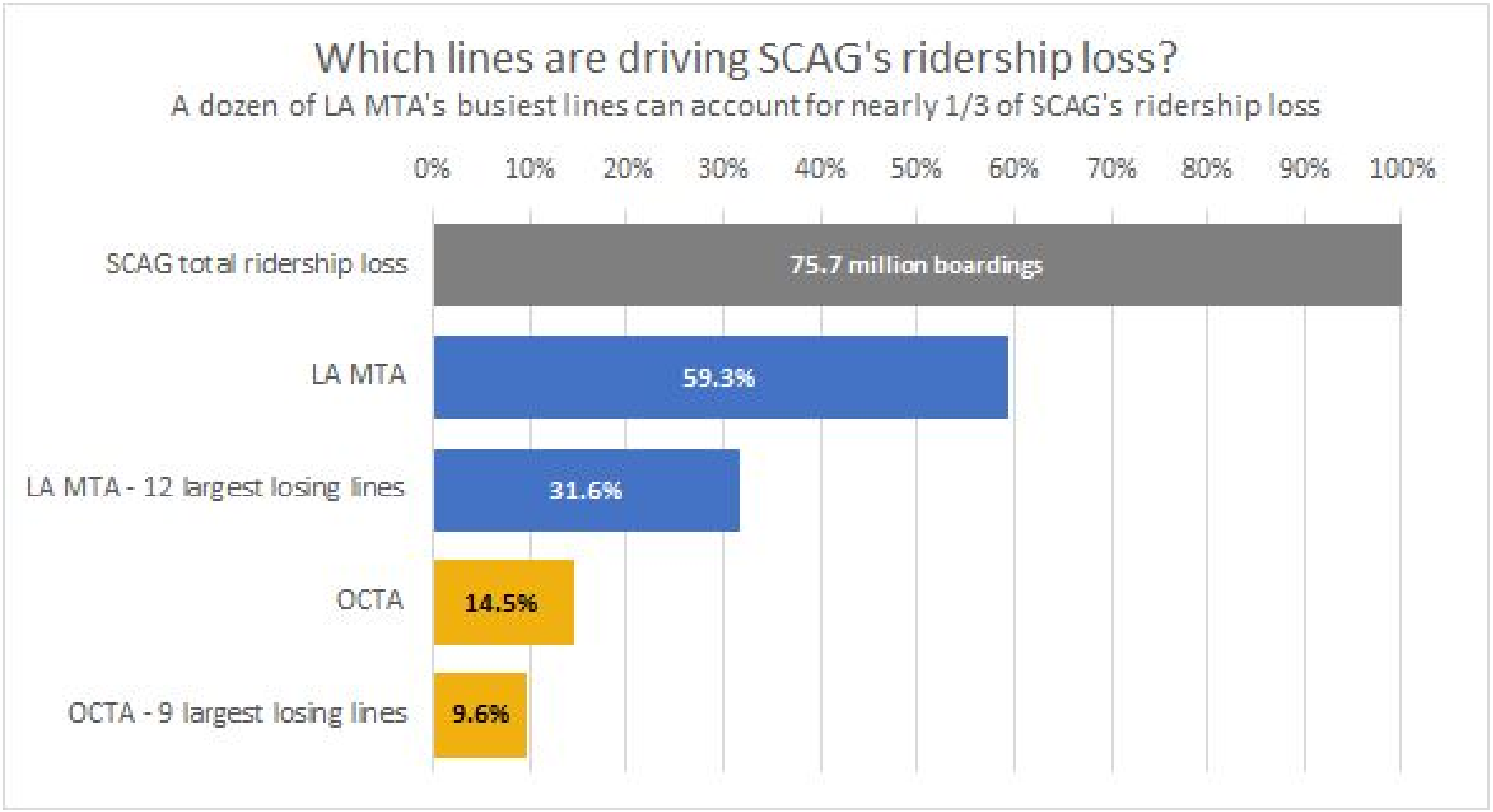
Recent (2016) Ridership Trend

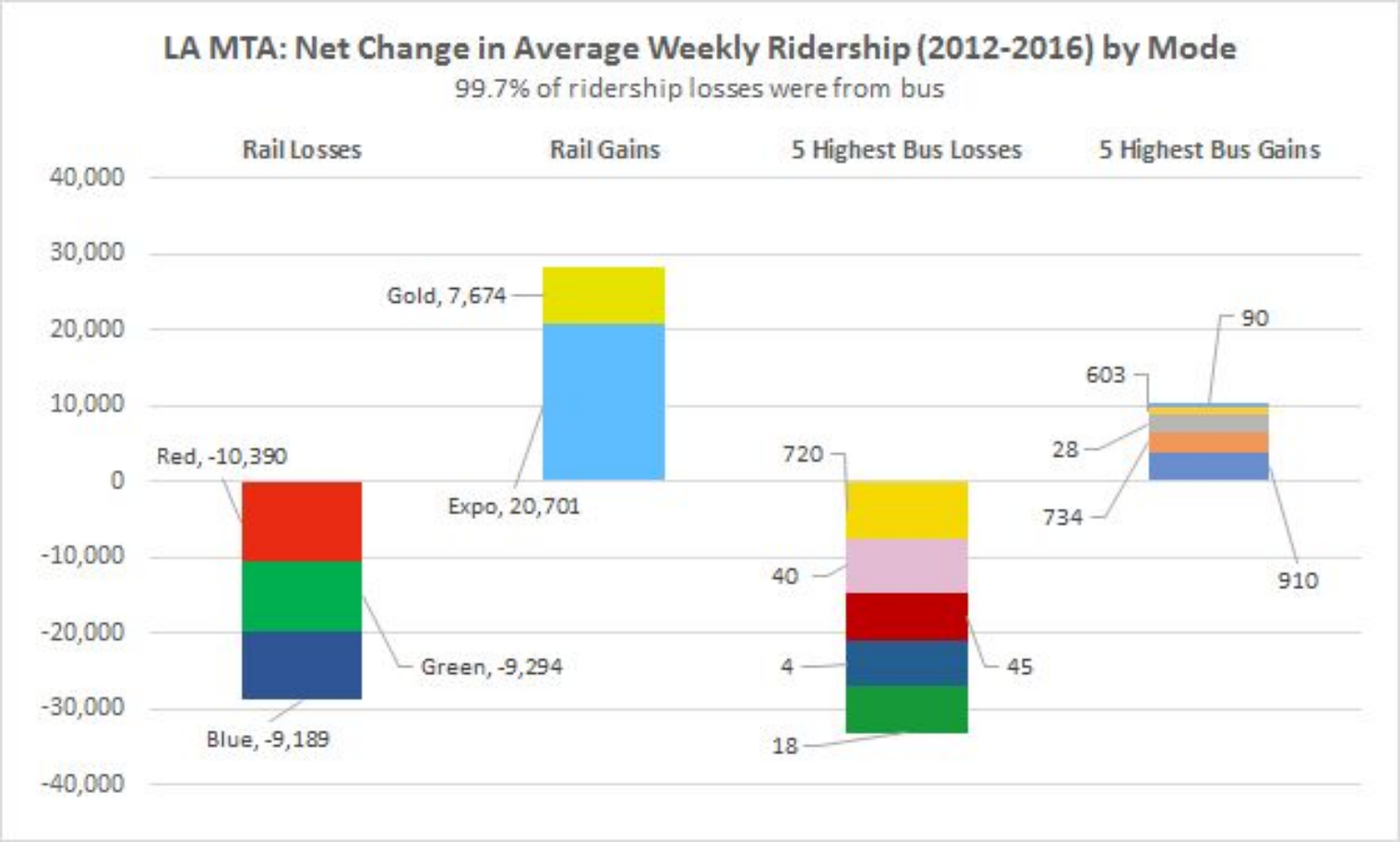
Transit Ridership Trend for First 11 Months of 2016 vs 2015

	Change in Jan - N Ridership	
Area	**2016 vs 2015**	**2016 201**
Statewide	-4.62%	-6
MTC	-0.51%	3
SCAG	-7.45%	-14
SACOG	-5.78%	-10
SANDAG	-6.08%	0
Other Areas	-5.49%	-7.63%

SCAG Ridership Trend, 2013-2016




Which lines are driving SCAG's ridership loss?
A dozen of LA MTA's busiest lines can account for nearly 1/3 of SCAG's ridership loss
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
SCAG total ridership loss
75.7 million boardings
LA MTA
59.3%
LA MTA - 12 largest losing lines
31.6%
OCTA
14.5%
OCTA - 9 largest losing lines
9.6%


LA MTA: Net Change in Average Weekly Ridership (2012-2016) by Mode
99.7% of ridership losses were from bus
Rail Losses
Rail Gains
5 Highest Bus Losses
5 Highest Bus Gains
40,000
30,000
20,000
10,000
0
-10,000
-20,000
-30,000
-40,000
Red, -10,390
Green, -9,294
Blue, -9,189
Gold, 7,674
Expo, 20,701
720
40
4
18
45
603
90
28
734
910

Sources of California Transit Operating Revenues and Capital Additions to Equity

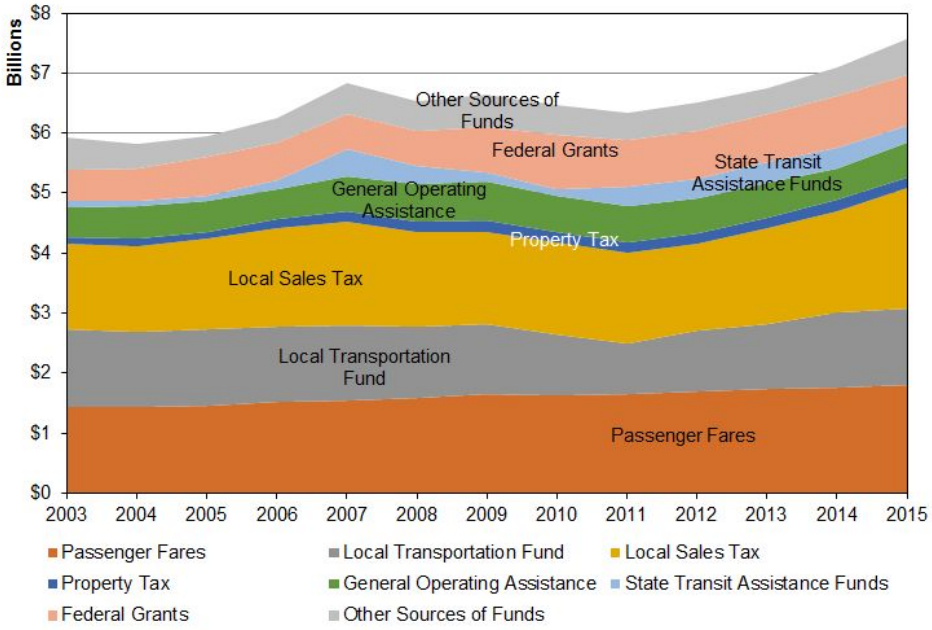
Operating	FY2014-15	Percent
Passenger Fares	$1,810,813,165	24%
LTF	$1,268,729,235	17%
Local Sales Tax	$1,995,889,536	26%
Property Tax	$192,727,050	3%
General Operating Assistance	$566,808,922	8%
STA	$282,638,794	4%
Federal Grants	$851,032,099	11%
Other Sources	$612,092,041	8%
Total Operating	**$7,580,730,842**	

Capital	FY 14-15	Percent
Federal Grants	$719,529,780	20%
State Grants	$1,143,640,957	31%
Local Revenues used for Capital	$1,807,311,675	49%
Other Capital Revenues	$4,467,981	0%
Total Capital	**$3,674,950,393**	

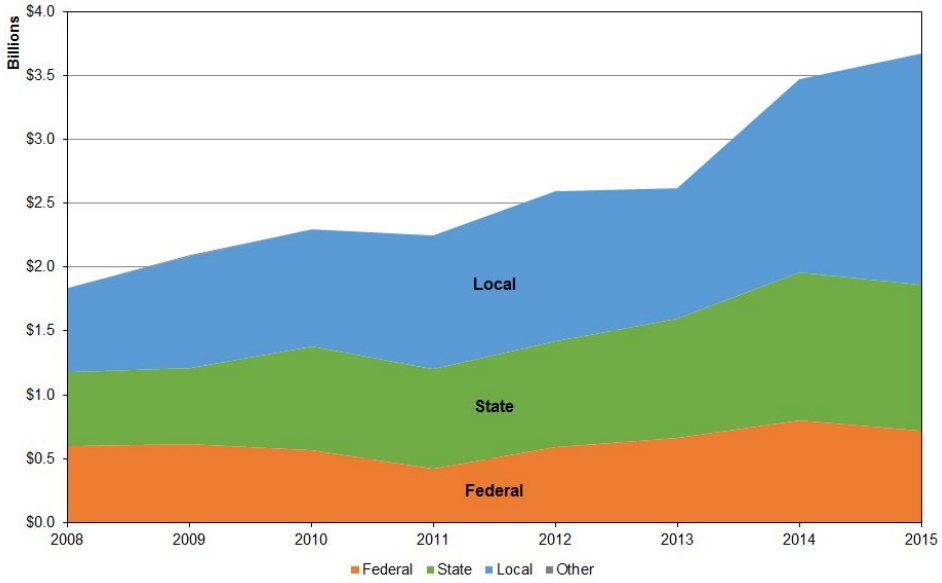
Source: State Controller's Office Transit Operators Financial Data

Trend: Growth in Local Revenues

Operating



Capital

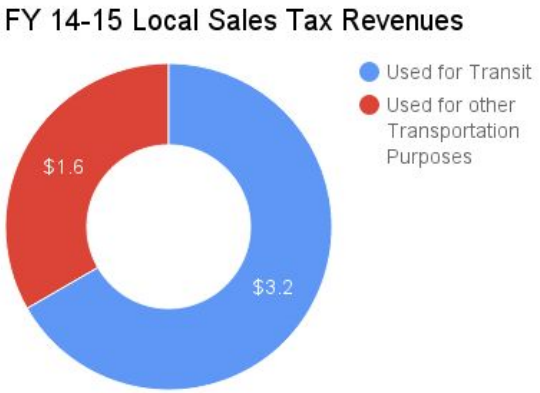


Local revenues grew from 36.3% of total transit funding in fiscal year 2008-09 to 40.5% in fiscal year 2014-15.

County Self-Help (Local Option) Sales Tax for Transportation

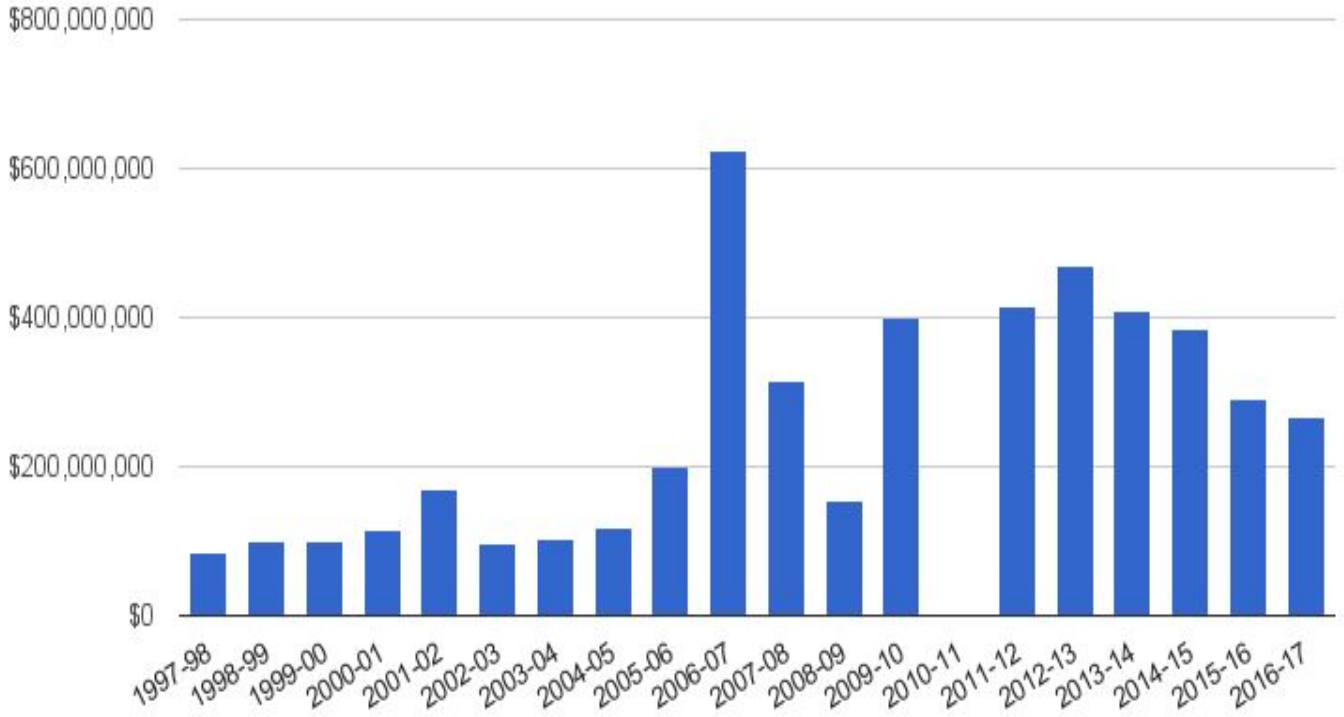
- FY2014-15 was the first year that self-help sales taxes provided more ($2.0 billion) operating funds for transit than fares ($1.8 billion)

- In FY2014-15, local sales taxes produced an estimated $4.8 billion for transportation
  - transit agencies reported using $3.2 billion in local sales taxes for transit purposes, or approximately two-thirds of statewide self-help transportation sales tax receipts



STA Fluctuations

Annual State Transit Assistance Allocations, 1997-2016 (SCO)



Greenhouse Gas Reduction Fund

Transit and Intercity Rail Capital Program (TIRCP)

In the first two funding rounds, agencies have been awarded $615.2 million in TIRCP grants towards $4.6 billion worth of projects.

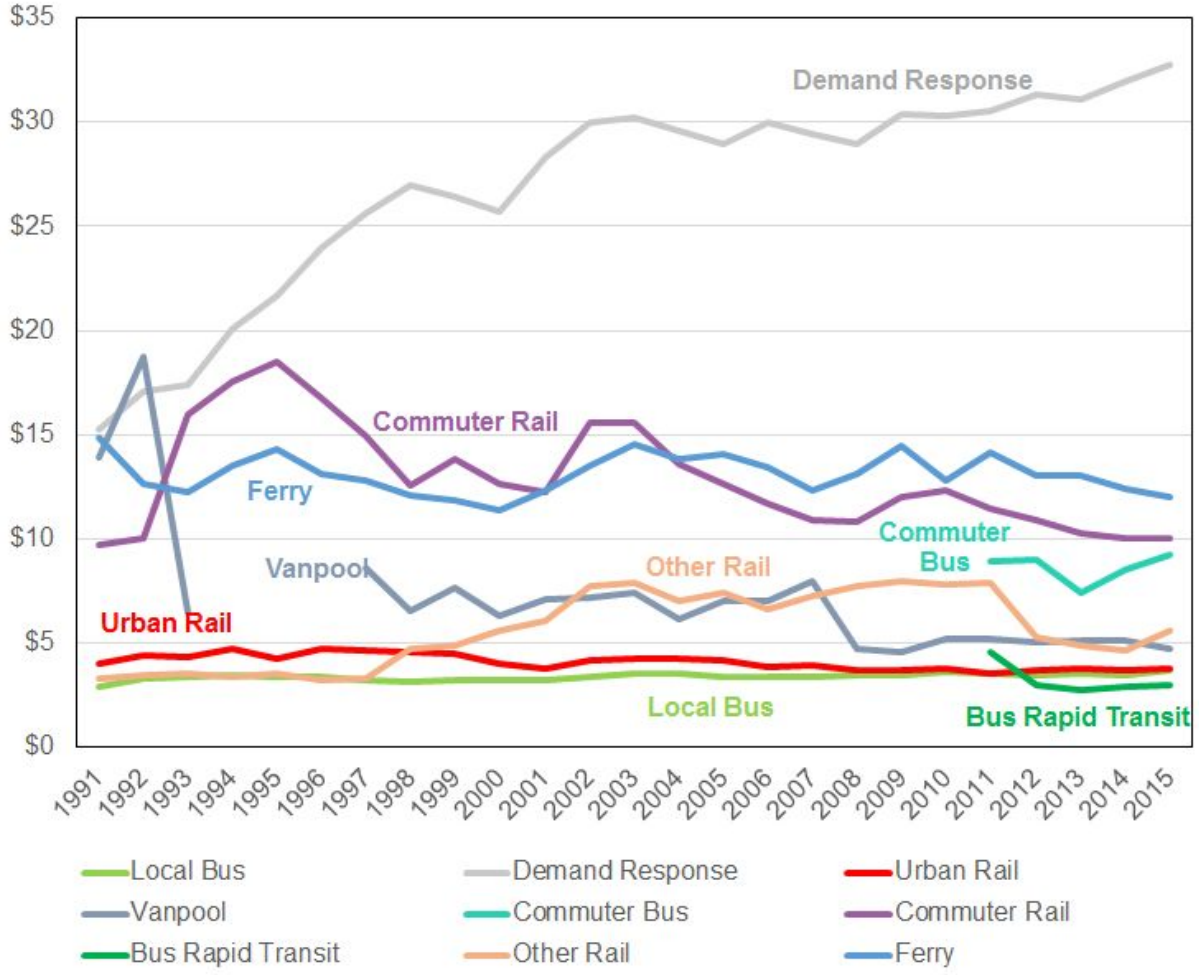
Low-Carbon Transit Operations Program (LCTOP)

The program awarded $24.2 million in FY 2014-15 and $74.7 million in FY 2015-16 for a total of $98.9 million.

Allocated using TDA (STA) formulas.

Inflation-Adjusted Operating Costs per Passenger Trip

Inflation-Adjusted Operating Cost <u>per Passenger Trip</u>

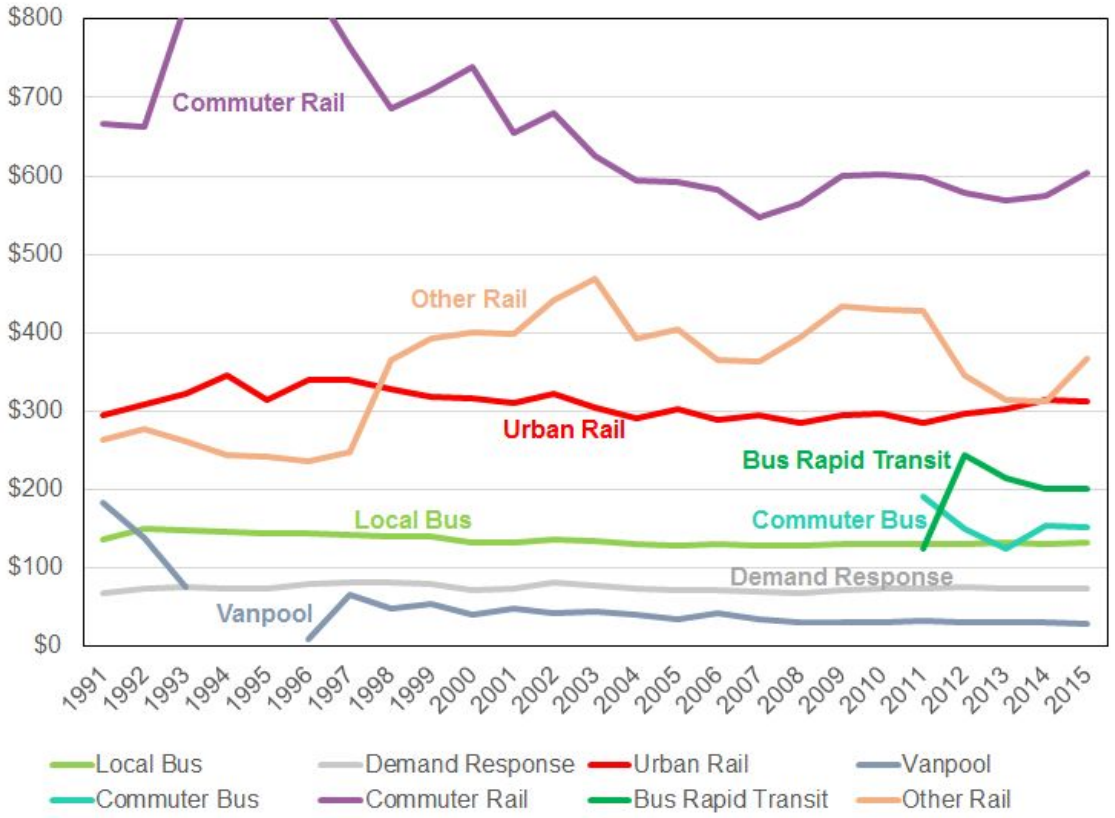


<u>Trends</u>

- **Demand Response** Increasing
- **Local Bus** and **Urban Rail** mostly steady

Inflation-Adjusted Operating Costs per Revenue Hour

Inflation-Adjusted Operating Cost per Revenue Hour

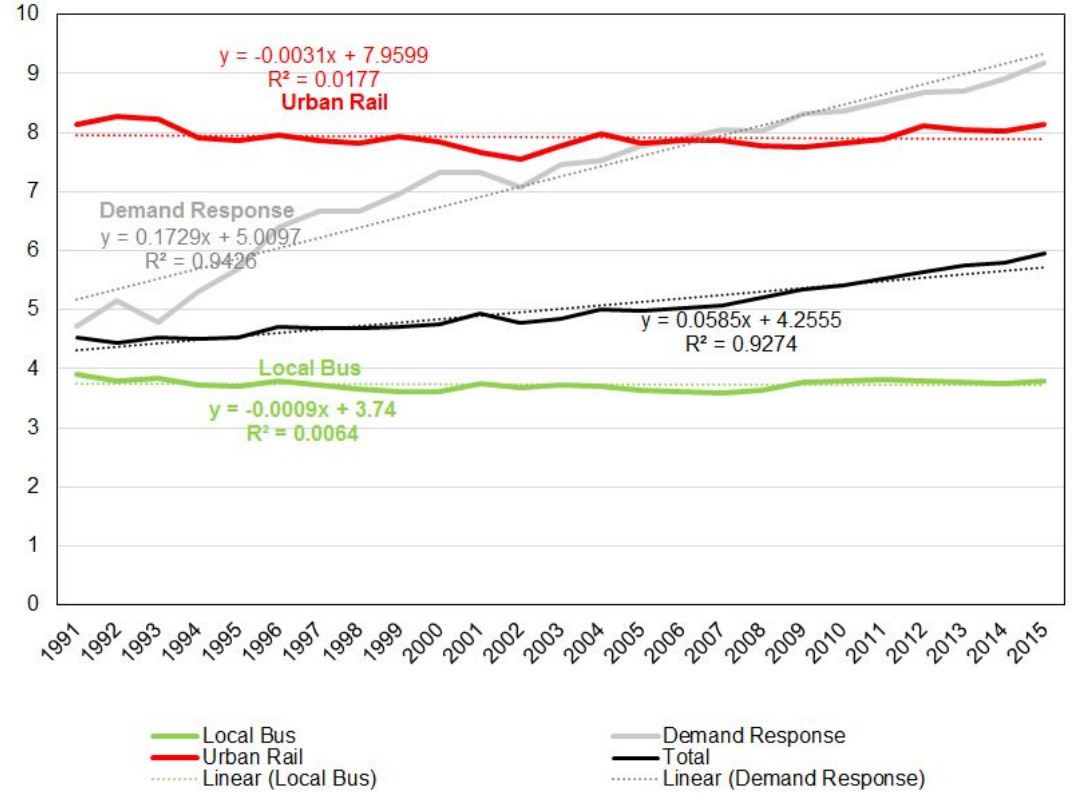


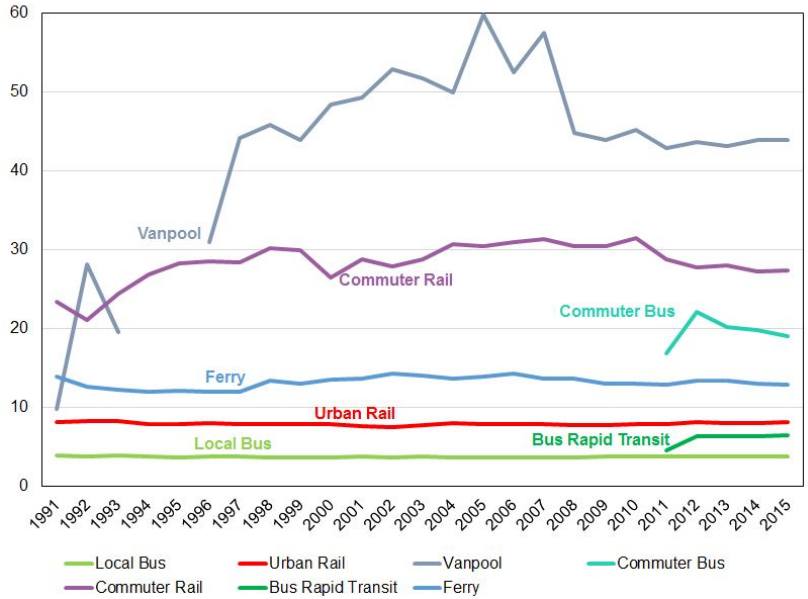
Trends

- **Most modes steady**

Service Consumption Trends

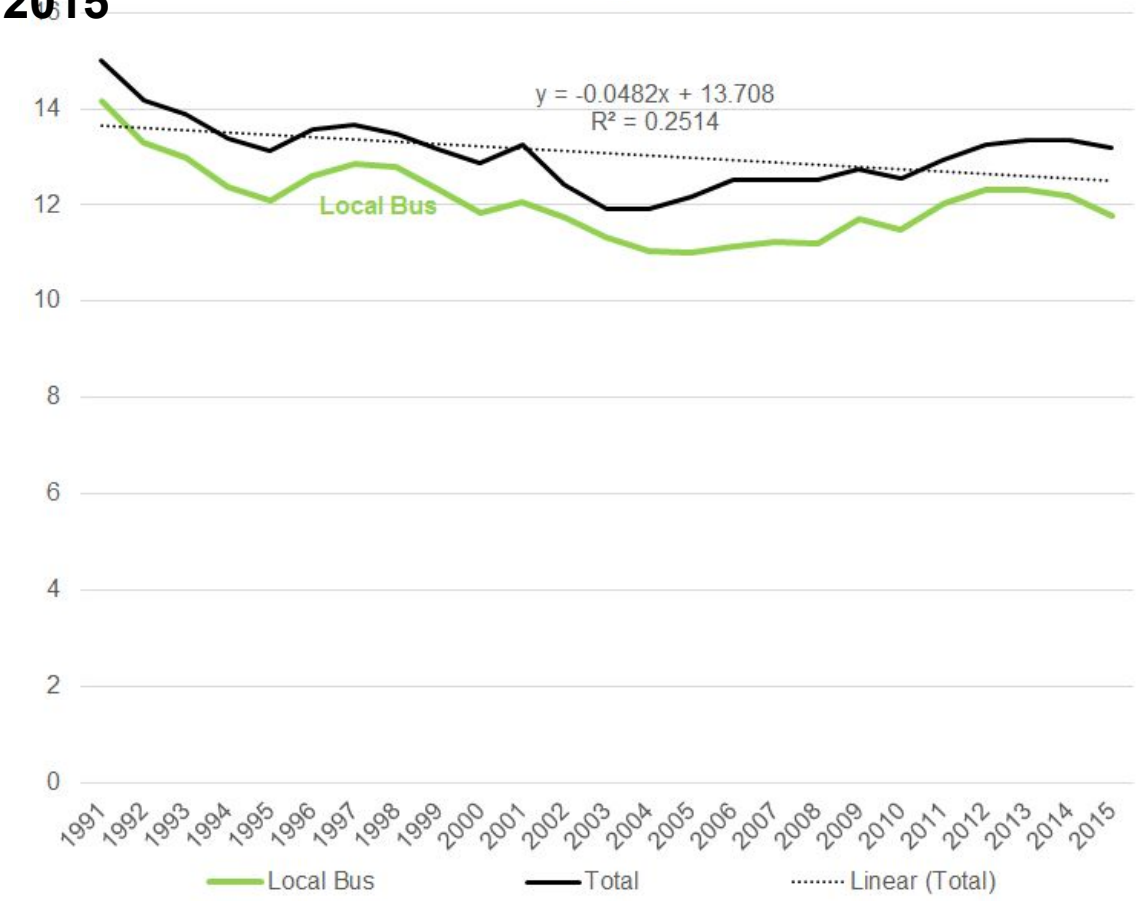
Longer Trips: Trend in Passenger Miles Traveled per Unlinked Passenger Trip





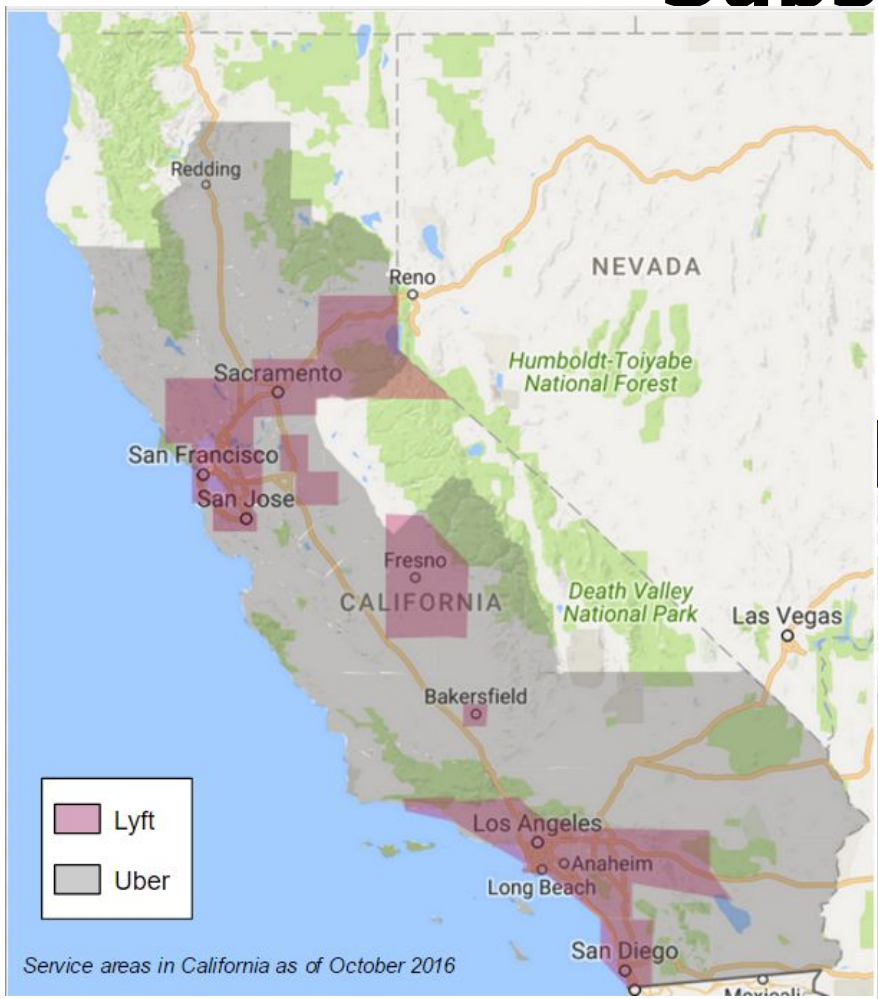
Service Effectiveness: Declining Local Bus Occupancy

Average Vehicle Occupancy, All Modes and Local Bus, 1991-2015



Declining bus occupancy has implications for GHG reductions from switching from transit from other modes

TNC-Transit Integration and Substitution



Integration

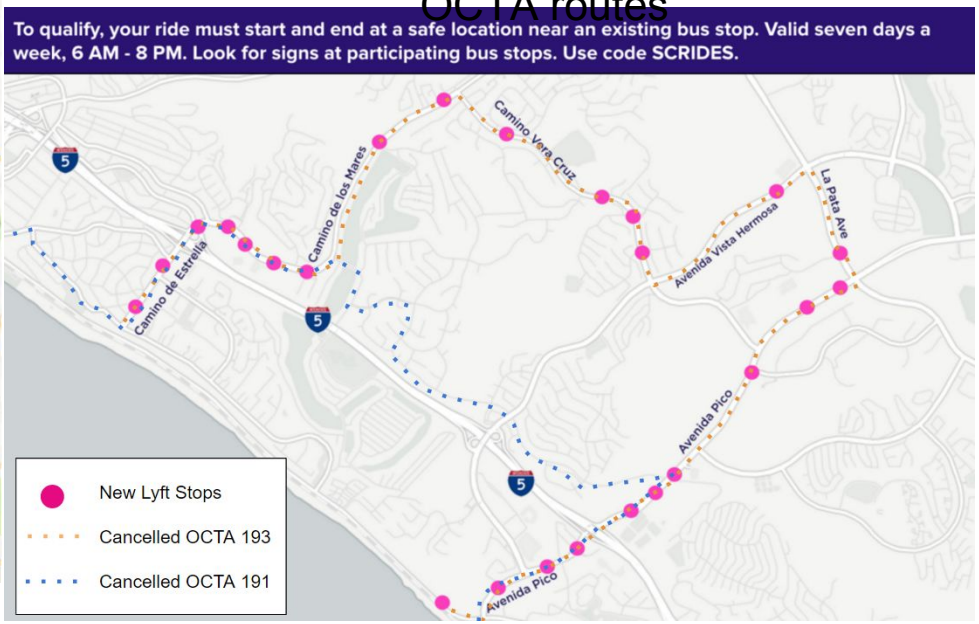
MTC carpooling (now cancelled)

LA Metro Expo Opening Weekend

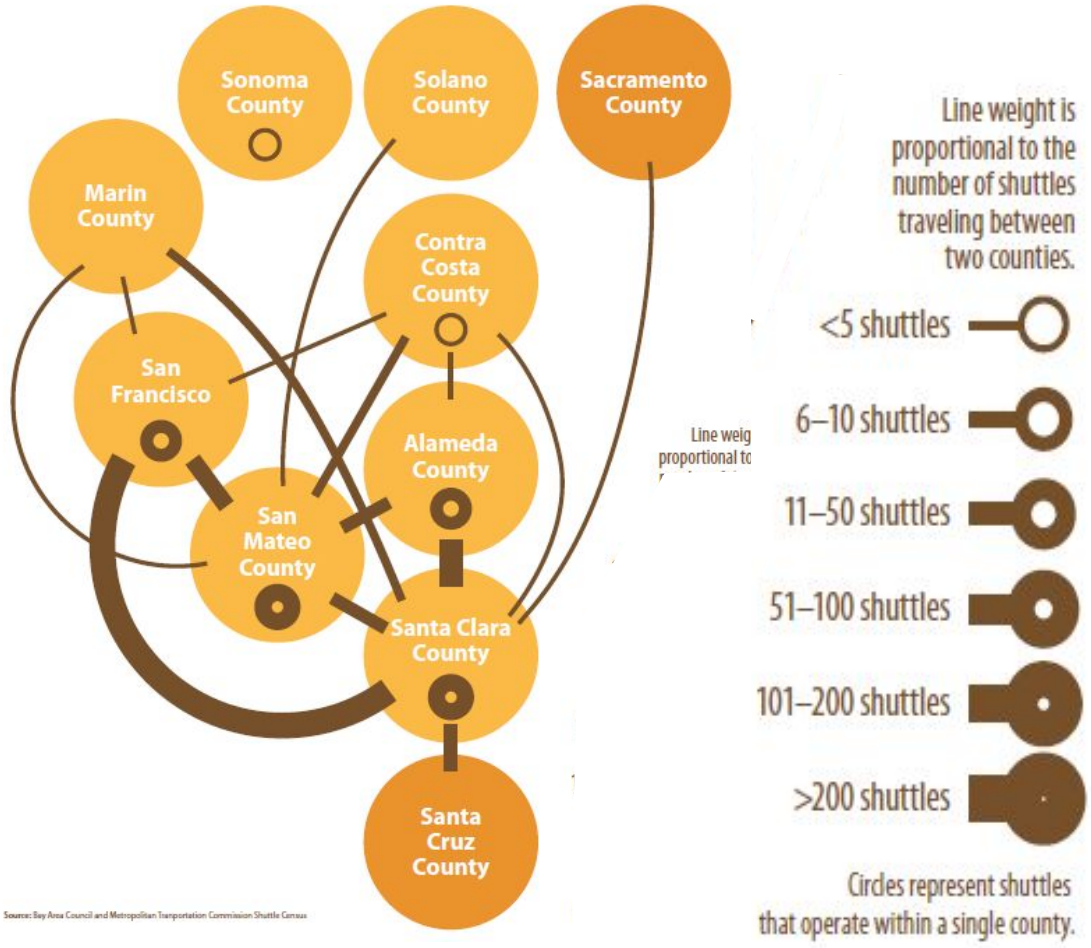
Substitution

Livermore/Amador - $200K contract; 1 cancelled bus route

San Clemente - $900K 2-year contract; 2 cancelled OCTA routes



Employer-Provided Commute Shuttles

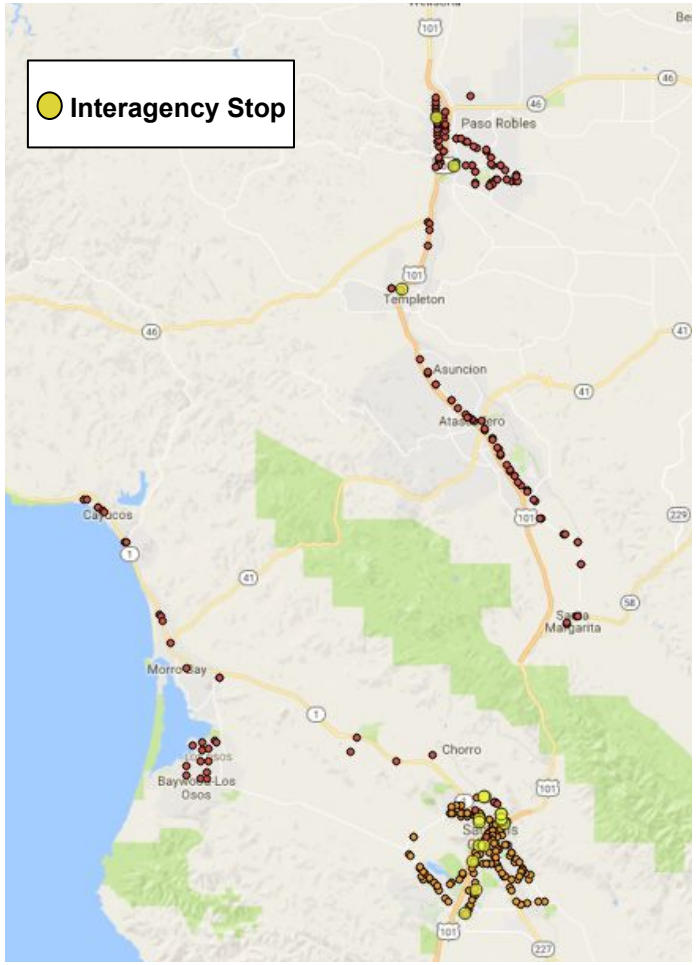


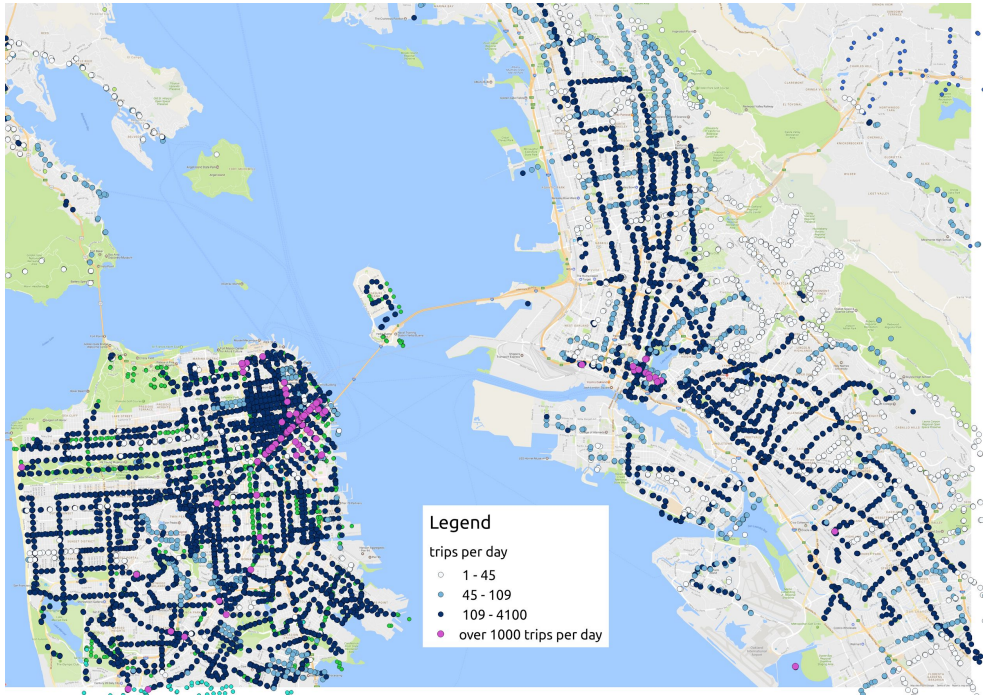
Significant Trip Volume

In their 2016 Census, MTC identified **765 vehicles providing 9.6 million passenger trips** in 2015. That's greater than the 4.6 million Commuter Bus trips reported statewide

Big Transit Data (GTFS) Analysis

The development of transit “big data” data brings the potential for new programmatic analysis and regularly-updated performance metrics





- **Interagency stop analysis illuminates “missed” scheduled connections**
- **Multi-agency trip analysis identifies “hidden” high-frequency corridors**

Existing Goals & Policies for Transit

1) A California transit passenger's experience should be seamless and reliable

1A. State to provide start-up grants and technical assistance for real-time passenger information systems

1B. State to support creation of universal payment systems/accounts for transit and other transportation-related payments (e.g. parking meters, tolls, intercity bus service, bike-share)

1C. State and agencies work to improve multi-system connectivity, including interagency transfers

2) Transit agencies and transportation planners should make smart, goal-driven decisions

2A. Share statewide successes and lessons learned in order to accelerate the implementation of best practices, particularly BRT and transit priority

2B. Fund Caltrans' creation and maintenance of a statewide transit data collection repository for data from local transit providers

2C. Identify transit equity and sustainability indicators that can be introduced into state and local planning

2D. California needs regional coordination of data and analysis to improve methods, data quality, and comparability

2E. The state should fund regular multi-modal surveys (including transit on-board surveys) and big data analysis to improve understanding of travel patterns

Our travel patterns are complex; help us understand them better.

3) Understand and enhance the comparative advantage of public transit versus other mobility options while preserving/enhancing personal mobility

3A. Understand changing market and demographic conditions and optimize transit to improve service in response

3B. Speed up vehicle boarding through streamlined payment and implementation of other best practices

3C. Work with state and local agencies on public education programs that increase traveler comfort with and perception of public transit

3D. Implement transit signal priority and other Intelligent Transportation Systems measures to increase transit's efficiency and reliability

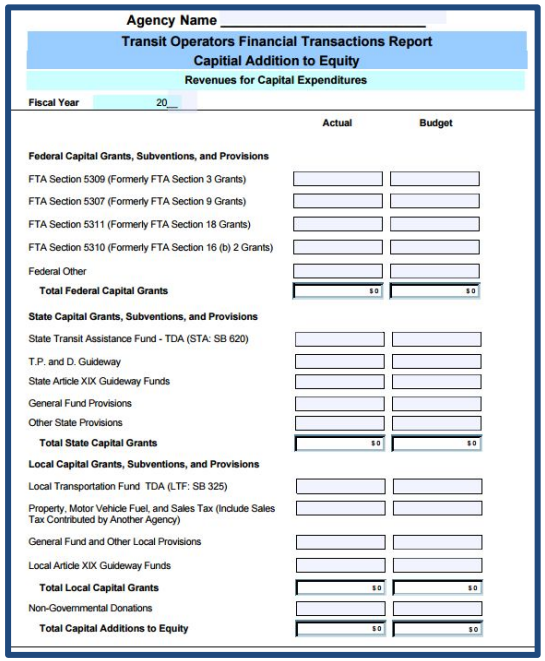
3E. Create incentives and reduce barriers to incorporating changes that improve the safety, efficiency, or service quality of transit when performing roadway maintenance or construction

4) The State should take steps to maximize transit's revenues while minimizing the administrative burden of obtaining funding

4A. Streamline reporting processes for State and federal grants and funding allocations

4B. Report publicly-sponsored vanpool service data in order to attract federal operating funds

4C. Support a competitive grant program for transit capital replacement, acquisition, and the development and construction of transit centers and bus maintenance facilities



Agency Name _____

Transit Operators Financial Transactions Report
Capital Addition to Equity
Revenues for Capital Expenditures

Fiscal Year 20__

	Actual	Budget
Federal Capital Grants, Subventions, and Provisions		
FTA Section 5309 (Formerly FTA Section 3 Grants)		
FTA Section 5307 (Formerly FTA Section 9 Grants)		
FTA Section 5311 (Formerly FTA Section 18 Grants)		
FTA Section 5310 (Formerly FTA Section 16 (b) 2 Grants)		
Federal Other		
Total Federal Capital Grants	$ 0	$ 0
State Capital Grants, Subventions, and Provisions		
State Transit Assistance Fund - TDA (STA: SB 620)		
T.P. and D. Guideway		
State Article XIX Guideway Funds		
General Fund Provisions		
Other State Provisions		
Total State Capital Grants	$ 0	$ 0
Local Capital Grants, Subventions, and Provisions		
Local Transportation Fund TDA (LTF: SB 325)		
Property, Motor Vehicle Fuel, and Sales Tax (Include Sales Tax Contributed by Another Agency)		
General Fund and Other Local Provisions		
Local Article XIX Guideway Funds		
Total Local Capital Grants	$ 0	$ 0
Non-Governmental Donations		
Total Capital Additions to Equity	$ 0	$ 0

5) Transit and supporting infrastructure should be in a state of good repair and resilient to potential climate impacts

5A. Implement a strategic approach for assessing and prioritizing transit assets to bring the public transit system into good repair (e.g.: FTA FAST Act State of Good Repair and Asset Management Rule)

5B. Transit agencies should participate in climate adaptation and resilience planning

6) Public agencies with influence over transportation or land use should pursue transit-supportive regional form and neighborhoods

6A. Implement transit-supportive land use strategies that also reduce distance traveled and increase the share of trips via transit, bicycling, and walking and reduce dependence on cars

6B. Work to create complete neighborhoods near transit

6C. Create complete streets and public spaces that support safe and efficient walking, bicycling, and transit use

6D. Support employer-assisted housing; reward employers who locate near transit

6E. Develop efficient parking management strategies to allow more people to travel using existing infrastructure

7) Leverage private activity that serves to reduce auto dependence and increase use of rideshare, transit, bicycling, and walking

7A. Provide funding for and support employer Transportation Demand Management (TDM) policies and outreach in transit corridors to increase use of transit, ridesharing, and vanpooling and allow more people to travel using existing infrastructure

7B. Create supportive policies and secure funding for the promotion of shared mobility, including car sharing, bike sharing, real-time ridesharing, Transportation Network Companies, scooter share, shared neighborhood electric vehicles, and on-demand shuttle and jitney services

Open Discussion | Q&A

Contact Us

Juan Matute
jmatute@ucla.edu

Joshua Pulverman
josh.pulverman@dot.ca.gov